

***NATIONAL WEATHER SERVICE INSTRUCTION 10-811***

***MAY 17, 2005***

***Operations and Services***

***Aviation Weather Services, NWSPD 10-8***

***ENROUTE FORECASTS AND ADVISORIES***

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**NOTICE:** This publication is available at: <http://www.nws.noaa.gov/directives/>.

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***SUMMARY OF REVISIONS:*** Supersedes NWSI 10-811, Enroute Forecasts and Advisories, dated April 22, 2004. Changes include:

Deleted all references to WFO Guam as a Meteorological Watch Office (MWO). They no longer have this designation. Deleted SIGMET products from Appendix A which WFO Guam issued.

Updated section 4.f to reflect new procedures for amending/correcting SIGMETs.

Updated section 5.a.(1) to reflect new Area Forecast bulletin segments.

Updated section 6.1, SIGMET Criteria, to state in accordance with ICAO Annex 3, the numbering sequence for each SIGMET series will be reset to 1 (one) for the first SIGMET in each series issued after 0000UTC each day.

Updated section 6.8, 6.9, and 6.10 to reflect new SIGMET Cancellation, Amendment, and Correction procedures, and updated examples in section 10 to reflect new World Meteorological Organization (WMO) headers and procedural changes for SIGMETs as noted in sections 6.8, 6.9, and 6.10.

Updated Appendix A to reflect new WMO headers for all SIGMET, Convective SIGMET (WST), AIRMET, and Area Forecast products issued by each MWO; Volcanic Ash Advisories issued by the Anchorage Volcanic Ash Advisory Center, which is the AAWU (Note: Only the AWC issues WSTs); and procedures for naming SIGMETs in the Pacific Basin (see Section 4).

Updated area of responsibility maps in Appendix B.

//SIGNED//

April 18, 2005

Dennis H. McCarthy

Date

Acting Director, Office of Climate, Water, and Weather Services

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**1. Purpose.** This instruction addresses National Weather Service (NWS) procedures for Area Forecasts (FA), Significant Meteorological Advisories (SIGMET), Airman's Meteorological Advisories (AIRMET), and Volcanic Ash Advisories (VAA) for U.S. domestic and controlled international airspace.

**2. General.** FAs, SIGMETs, AIRMETs, and VAAs provide complete coverage for aviation customers in US controlled airspace, including all 50 states and adjacent coastal waters, and international oceanic areas. These are defined as:

- a. FA: An overview of weather conditions which could impact aviation operations.
- b. AIRMET: Provides notice of significant weather phenomena, issued as scheduled products, for icing and freezing level; turbulence, strong surface winds and low-level wind shear; and Instrument Flight Rules (IFR) and mountain obscuration, all at intensities lower that DO NOT meet SIGMET criteria.
- c. SIGMET: Provides en-route aircraft and aircrew's notice of potentially hazardous phenomena such as thunderstorms and hail, turbulence; icing, sandstorms and duststorms; tropical cyclones; and volcanic ash.
- d. VAA: Provides en-route aircraft and aircrews notice when airborne volcanic ash is observed or reported which may affect the atmosphere in designated areas.

Each of these products is designed to serve civilian and military aviation as a common system aviation weather safety program. NOTE: Information regarding significant weather for all areas of the world at or above Flight Level (FL) 150 is contained in synchronous Significant Weather

High (SWH) and/or Significant Weather Medium (SWM) issuances from the World Area Forecast Centers (WAFC).

**3. Responsibility for Issuance.** The U.S. has three Meteorological Watch Offices (MWO) with responsibilities defined in International Civil Aviation Organization (ICAO) Annex 3. They are the Aviation Weather Center (AWC), Alaska Aviation Weather Unit (AAWU), and Weather Forecast Office (WFO) in Honolulu. Their areas of responsibility are:

- a. The AWC:
  - (1) 20 Federal Aviation Administration (FAA) Air Route Traffic Control Center (ARTCC) Flight Information Regions (FIR) in the Conterminous U. S. (CONUS) out to the domestic FIR boundary.
  - (2) The New York, Houston, Miami, and San Juan Oceanic FIRs.
  - (3) The Oakland Oceanic FIR north of 30 north latitude, and the portion east of 140 west longitude which is between the equator and 30 north latitude.
- b. The AAWU is responsible for the Anchorage FIR.
- c. WFO Honolulu is responsible for the Oakland Oceanic FIR south of 30 north latitude, between 140 west and 130 east longitude.

**4. Standardization.** All forecasts and in-flight advisories will follow these standards:

- a. All referenced heights or altitudes will be annotated as FL for heights at or above 18,000 and consist of three (3) digits depicting height in hundreds of feet Mean Sea Level (MSL).
- b. References to latitude and longitude will be in whole degrees and minutes following the model: Nnn[nn] or Snn[nn], Wnnn[nn] or Ennn[nn] with a space between latitude and longitude and a hyphen between successive points.
- c. Messages will be prepared using approved ICAO contractions, abbreviations and numerical values of self-explanatory nature.
- d. Weather and obstructions to visibility will be the same as weather abbreviations used for surface airways observations (METAR or SPECI - see Federal Meteorological Handbook (FMH) No. 1 - Surface Observations).
- e. AIRMETs and SIGMETs will be disseminated to meteorological offices and users in accordance with applicable regional air navigation agreements as required.
- f. All amended (AMD) or corrected (COR) enroute forecasts or advisory products will follow the same format procedures, except for amended or corrected SIGMETs (WS only -

see section 6.9 and 6.10 for these specific procedures). Further, because each of these products can be lengthy, the reason for the AMD/COR will be added as the last line of the product.

**5. Area Forecasts (FA).** The FA will describe in abbreviated language specified en-route weather phenomena below FL450.

a. AWC provides the following FAs:

- (1) The six (6) geographical areas covering the CONUS and adjacent coastal waters. Each FA will consist of three (3) sections: a synopsis, Visual Flight Rules (VFR) clouds and weather, and a VFR, Marginal VFR (MVFR), and Instrument Flight Rules (IFR) categorical outlook.
- (2) The Gulf of Mexico FA is an overview of weather conditions which could impact helicopter aviation operations over the northern Gulf of Mexico and adjacent coastal plains. It is both a flight planning and weather briefing aid from surface to 12,000 feet, and describes weather of significance to general aviation (GA), civilian, military and helicopter pilots and aviation. It also contains marine conditions. The synopsis and weather/marine forecast sections are valid for 12 hours, with the outlook section valid for 12 hours beyond the synopsis and forecast section valid period.
- (3) The Caribbean FA is an overview of weather conditions which could impact aviation operations over the Gulf of Mexico and adjacent land masses; the Caribbean Sea and adjacent land masses and islands; and the southwestern portions of the New York Oceanic FIR. The synopsis and forecast sections will be valid for 12 hours each, with the outlook valid for 12 hours beyond the synopsis and forecast section valid period.

b. WFO Honolulu will issue the FA for the main Hawaiian Islands and coastal waters (extending out 40 NM from the coastlines).

c. The AAWU will issue Alaskan FAs for the state and coastal waters of Alaska, including the Pribilof Islands and Southeast Bering Sea. Alaskan FAs will include SIGMET and AIRMET information, and are issued under seven separate World Meteorological Organization (WMO) headers.

**5.1 FA Coverage and Content.** Each FA contains a reference to valid SIGMETs and AIRMETs followed by a “boiler plate” statement about conditions implied by a forecast of thunderstorms, except where noted. The examples in Section 10 contain this statement.

a. CONUS. The reference after each geographic location below is the numeric portion of the bulletin header. The other references in each bulletin area are 2-letter designators for states in that region.

- (1) Northeast (FAUS41): Maine - ME, New Hampshire - NH, Vermont - VT, Massachusetts - MA, Rhode Island - RI, Connecticut - CT, New York - NY, New Jersey - NJ, Pennsylvania - PA, Ohio - OH, Lake Erie - LE, Lake Ontario - LO, West Virginia - WV, Maryland - MD, District of Columbia - DC, Delaware - DE, Virginia - VA, and Coastal Waters.
- (2) Southeast (FAUS42): North Carolina - NC, South Carolina - SC, Georgia - GA, Florida - FL, and Coastal Waters.
- (3) North-Central (FAUS43): North Dakota - ND, South Dakota - SD, Nebraska - NE, Kansas - KS, Minnesota - MN, Iowa - IA, Missouri - MO, Lake Superior - LS, Wisconsin - WI, Lake Michigan - LM, Illinois - IL, Michigan - MI, Lake Huron - LH, Indiana - IN, and Kentucky - KY.
- (4) South Central (FAUS44): Oklahoma - OK, Texas - TX, Arkansas - AR, Tennessee - TN, Louisiana - LA, Mississippi - MS, Alabama - AL, and Coastal Waters.
- (5) Rocky Mountain (FAUS45): Idaho - ID, Montana - MT, Wyoming - WY, Nevada - NV, Utah - UT, Colorado - CO, Arizona - AZ, and New Mexico - NM.
- (6) Pacific Coast (FAUS46): Washington - WA, Oregon - OR, California - CA, and Coastal Waters.

The FAUSs are produced three times daily for each of two areas. The following are issuance times for FAUSs (NOTE: All times are Universal Time Coordinated (UTC) and are based on U.S. Standard Time; subtract one hour to all issuance times for U.S. Daylight Savings Time): FAUS41/42 - 0145/0945/1845; FAUS43/44 - 0245/1045/1945; and FAUS45/46 - 0345/1145/2045. The FAUSs include a synopsis, which is a short description of significant synoptic weather systems affecting the area during the 18 hour valid period; VFR Clouds/Weather for a 12 hour period, with information referenced to states or geographic areas describing cloud conditions, weather and/or visibility which are MVFR or better in the following order: thunderstorms and their implications, sky condition (cloud height, amount, and tops) if bases are at or below (AOB) FL180 MSL, weather (precipitation, fog, haze, blowing dust, etc.) if surface visibilities are three (3) to six (6) miles, and significant wind information; and an outlook, which is a 6-hour categorical forecast for IFR, MVFR, or VFR.

b. Gulf of Mexico FA. The Gulf of Mexico FA (FAGX) is a single product combining information contained in an FA prepared for the conterminous U.S., the in-flight advisories -- AIRMET/SIGMET, and the marine precautions. Each section describes the phenomena impacting the respective area and will always have an entry even if it is negative.

The FAGX, valid for 12 hours with a 12 hour extended outlook, is produced twice daily at 1030 and 1830 UTC. It contains a synopsis and a weather/marine forecast section. The weather/marine section includes flight precautions AOB 12,000 feet for thunderstorms which are

at least scattered or meet Convective SIGMET criteria; moderate or greater turbulence; moderate or greater icing; wind speeds greater than or equal to (GTE) 25 knots below 1000 feet; ceilings and/or visibilities less than (LT) 1000 feet and/or three (3) miles; marine precautions for dense fog (visibility less than or equal to (LTE) 1 mile (sea fog) for an area covering 3,600 square nautical miles); small craft advisory (wind speeds 20 to 34 knots); gale warning (wind speeds 35 to 50 knots); storm warning (wind speeds greater than (GT) 50 knots); significant wave heights GTE eight (8) feet; and areas where small craft should exercise caution.

c. Caribbean FA. The Caribbean FA (FACA) covers the following area: the Atlantic south of 32N and W of 57W, the Caribbean, the Gulf of Mexico and adjacent coast north of 23 N, and Florida from surface to FL240 (400 hPa). The clouds/weather forecast section is provided by portions of the area as follows: Southern LA, MS, AL and Coastal Waters; Gulf of Mexico - Houston (HOU) and Gulf of Mexico - MIA FIRs; Florida and Coastal Waters; Atlantic Southwestern NY FIR; Atlantic MIA FIR; San Juan FIR; Western Piarco FIR; Santo Domingo, Port au Prince and Habana FIRs; Northern Maiquetia, Curacao and Northern Barranquilla FIRs; Kingston and Northern Central America FIRs; Northern Merida FIR: and Eastern Monterrey FIR.

The FACA is produced four times daily at 0330, 0930, 1530, and 2130 UTC. It provides an overview of weather conditions which could impact aviation operations over the Gulf of Mexico and adjacent land masses; the Caribbean Sea and adjacent land masses and islands; and the southwestern portions of the New York Oceanic FIR. In this form, it serves as a flight planning and weather briefing aid and includes AIRMET criteria for turbulence and icing for general aviation pilots, and civil and military aviation operations. Each bulletin has a 12 hour forecast with a 12 hour outlook. It includes a synopsis, Cloud/Weather flight precautions AOB 24,000 feet for moderate or greater turbulence and moderate or greater icing, and a forecast of significant clouds and weather, with conditions reported as VFR, MVFR, or IFR.

d. Alaska. The Alaskan FAs are produced four (4) times daily at 0245, 0845, 1445, and 2045 UTC during standard time and 0145, 0745, 1345, and 1945 UTC during daylight time. FAs contain a short synopsis for the entire area; and a forecast for each of a specified number of aviation zones. The valid period of the synopsis and flight precautions section will be 12 hours. The outlook section will be for eighteen (18) hours beyond the forecast valid period.

The zone forecasts contain sections on Clouds and Weather, Turbulence, and Icing and Freezing Levels. The Clouds and Weather section includes:

- (1) SIGMETs for Thunderstorms and Volcanic Ash.
- (2) AIRMETs for IFR ceiling and visibility, mountain Obscuration, and strong surface winds.
- (3) Bases and tops of significant cloud layers.
- (4) Visibilities of six (6) miles or less and restricting phenomena.
- (5) Precipitation and thunderstorms.
- (6) Surface winds of 20 KTS or greater.
- (7) Outlook using categorical terms (i.e., VFR CIG, MVFR BR, IFR SN WND).

- (8) Mountain pass conditions using categorical terms (for selected zones only).

The Turbulence section includes:

- (1) SIGMETs for Turbulence
- (2) AIRMETs for Turbulence and/or Low Level Wind Shear (LLWS).
- (3) Forecast of significant turbulence not meeting SIGMET or AIRMET criteria or that is forecast for the period 6 to 12 hours after issuance.
- (4) If no significant turbulence is forecast, NIL SIG will be entered.

Icing section includes:

- (1) SIGMETs for Icing.
- (2) AIRMETs for Icing and freezing precipitation.
- (3) Forecast of significant icing not meeting SIGMET or AIRMET criteria or which is forecast for the period 6 to 12 hours after issuance.
- (4) Freezing Level.
- (5) If no significant icing is forecast, NIL SIG will be entered followed by the freezing level.

e. Hawaii. FAs are produced four times daily at 0340, 0940, 1540, and 2140 UTC. The synopsis will be valid for 18 hours. The VFR Clouds/Weather will be valid for the first 12 hours and the outlook will be valid for the last six (6) hours of the 18-hour period.

**5.2 FA Amendments.** If any phenomenon or condition included in any FA is no longer expected to affect low-level flights (including VFR), and the new condition is expected to exceed half the period between regular issuances, a FA AMD message should be issued to reflect the new condition. An amended FA will contain AAA after the date/time group on the WMO line for the first amendment, AAB for the second, and continuing for all subsequent amendments. Then add AMD after the date/time group on the FAA product line. Further, because FAs can be lengthy, section 4.f describes how to make identification of amendments easier for the user.

**5.3 FA Corrections.** FAs containing errors will be corrected. To do this, add CCA after the date/time group on the WMO line for the first correction, CCB for the second, and continuing for all subsequent corrections. Then add COR after the date/time group on the FAA product line. The first time indicated is the issuance time, with the ending valid time unchanged. Further, because FAs can be lengthy, section 4.f describes how to make identification of corrections easier for the user.

**NOTE: Amendments and corrections will carry the CURRENT time of the FA being corrected. The FAA uses a time matching system of replacing products and unless the product has time different than the previous issuance, it will not store.**



**5.4 Routine Delayed (RTD) FAs.** For FAs delayed in transmission, add RRA after the date/time group on the WMO line for the first RTD, RRB for the second, and continuing for all subsequent RTDs. Then add RTD after the date/time group on the FAA product line. The first time indicated is the issuance time, with the ending valid time unchanged.

**6. SIGMETs.** SIGMETs are a brief description of occurrence and/or expected occurrence of specified en-route weather phenomena which may affect the safety of all aircraft operations. They must be issued by the responsible MWO as soon as practical to ensure potentially affected aircraft can take necessary avoidance or precautionary actions.

**6.1 SIGMET Criteria.** SIGMETs will be issued when any of the following is occurring, or expected to occur, affecting an area approximately one (1) latitude degree squared, (about 3000 square miles), or an area deemed to have a significant effect on the safety of aircraft operations.

- |    |                               |                |
|----|-------------------------------|----------------|
| a. | Thunderstorm - of type below* |                |
|    | (1) Obscured                  | OBSC TS        |
|    | (2) Embedded                  | EMBD TS        |
|    | (3) Widespread                | WDSPR TS       |
|    | (4) Squall line               | SQL TS         |
|    | (5) Isolated severe           | ISOL SEV TS    |
| b. | Severe Turbulence             | SEV TURB       |
| c. | Severe Icing                  | SEV ICE        |
|    | (1) With freezing rain        | SEV ICE (FZRA) |
| d. | Widespread Duststorm          | WDSPR DS       |
| e. | Widespread Sandstorm          | WDSPR SS       |
| f. | Volcanic Ash                  | VA             |
| g. | Tropical Cyclone              | TC             |

NOTE: Obscured, embedded, or squall line thunderstorms do not have to reach 3000 square miles.

\* Tornado (TDO), Funnel Cloud (FC), Waterspout (WTSPT), and Heavy Hail (HVVGR) may be used as a further description of the thunderstorm as necessary.

In accordance with ICAO Annex 3, the numbering sequence for each SIGMET series will be reset to 1 for the first SIGMET in each series issued after 0000UTC each day.

**6.2 SIGMET for Volcanic Ash.** A SIGMET for volcanic ash (VA) will be issued for all volcanic eruptions, regardless of the eruption's magnitude. Volcanic ash SIGMETs will continue to be issued until the ash cloud is no longer a threat to aviation. The forecast position information for the volcanic ash cloud should be based on advisories provided by a Volcanic Ash Advisory Center (VAAC). Initial VA SIGMETs may be issued based on credible pilot or aircraft reports in the absence of a Volcanic Ash Advisory (VAA), but should be updated once a VAA is issued.

**6.3 SIGMET for Tropical Cyclone.** A SIGMET for a tropical cyclone will be issued for non-frontal synoptic-scale cyclones meeting the following criteria:

- a. Originate over tropical or sub-tropical waters with organized convection and definite cyclonic surface wind circulation.
- b. Wind speeds reach 35 knots, independent of the wind averaging time used by the Tropical Cyclone Advisory Center (TCAC).

MWOs preparing SIGMETs for tropical cyclones will use the FK bulletins issued by the appropriate TCAC (Miami, Honolulu, or Tokyo) for specific forecast and outlook information. An example is provided in section 10.

**6.4 Convective SIGMET over CONUS.** Convective SIGMETs (WST) are issued over the CONUS instead of SIGMETs for convection. They are prepared as bulletins (collections of one or more products) issued for thunderstorms and related phenomena.

**6.4.1 WST Criteria.** A WST will be issued when the following occurs and/or is forecast to occur:

- a. Severe thunderstorm and embedded thunderstorm occurring for more than 30 minutes of the valid period regardless of the size of the area.
- b. A line of thunderstorms.
- c. An area of active thunderstorms affecting at least 3,000 square miles.

**6.4.2 Special WST.** A special WST will be issued when either of the following criteria are met and/or forecast to be met for more than 30 minutes of the scheduled WST's valid period:

- a. Tornado, hail GTE 3/4 inch, or wind gusts GTE 50 knots is reported or indicated when the previous WST did not mention severe thunderstorms.
- b. Indications of rapidly changing conditions, if in the forecaster's judgment, they are not sufficiently described in existing SIGMETs.

**6.4.3 WST Bulletins.** Three (3) WST bulletins, describing conditions in the eastern, central and western regions of the CONUS, respectively, will be issued hourly. Special WSTs will be issued as required. Each WST bulletin will be made up of one or more individually numbered WSTs for conditions within the region and are valid for up to two (2) hours (or until superseded by the next hourly issuance).

**6.4.4 Bulletins for No Activity Meeting WST Criteria.** Since the WST bulletin is a scheduled product, a message must be transmitted each hour. If there are no conditions within a region meeting the criteria at the scheduled time of issuance a “CONVECTIVE SIGMET...NONE” message is transmitted.

**6.5 SIGMET Headers.** Except for the CONUS, the AWC provides SIGMETs for all phenomena listed in sections 6a through f, using the WMO SIGMET header WS. Over the CONUS, SIGMETs providing information on convection are issued as WST. The AAWU will issue SIGMETs for all phenomena listed in sections 6a through f under the WMO Header designation WS. WFO Honolulu will issue SIGMETs for all phenomena with the exception of volcanic ash and tropical cyclones under the WS designation. SIGMETs for volcanic ash will be issued under WMO Header designator WV and SIGMETs for tropical cyclones under the designator WC.

**6.6 SIGMET Valid Period.** SIGMETs (other than WSTs) for phenomena listed in section 6a through e will have a valid period not to exceed four (4) hours. These SIGMETs may be issued up to four (4) hours before the initial valid time. SIGMETs for continuing phenomena will be reissued at least every four (4) hours as long as SIGMET criteria are met.

**6.6.1 SIGMETs for Volcanic Ash and Tropical Cyclones.** SIGMETs for volcanic ash or tropical cyclones will be valid up to six (6) hours, with an outlook of up to twelve (12) hours beyond the valid period. They will be reissued at least every six (6) hours while the volcanic ash or tropical cyclone exists or is forecast to exist. SIGMET messages for volcanic ash or tropical cyclones expected to affect an FIR should be issued up to 12 hours before the start of the valid period, or as soon as practicable if such advance warning of the existence of these phenomena is not available.

**6.7 SIGMET Information.** SIGMETs will not contain unnecessary descriptive material. SIGMET information about thunderstorms or tropical cyclones will not include references to associated turbulence and icing.

**6.8 SIGMET Cancellation.** SIGMETs will be canceled when the phenomena is no longer occurring or expected to occur in the area. This is done by issuing the next SIGMET in the series, which advances the SIGMET number. Immediately after the FIR location indicator for the SIGMET, state “CNL SIGMET {SERIES} {#}”, where {SERIES} is the SIGMET designator and {#} is the series number, and add the reason for cancellation, i.e. “TS HAVE DIMINISHED”. WSTs are not canceled, but are superseded by the next SIGMET series.

**6.9 SIGMET Amendments.** Updates to SIGMETs will be issued as necessary. This is done by issuing a new SIGMET in the series, which advances the SIGMET number and replaces the previous SIGMET. Reset the valid time of the new SIGMET to reflect a four (4) hour period.

**6.10 SIGMET Corrections.** Corrections to SIGMETs will be issued as necessary. This is done by issuing a new SIGMET in the series, which advances the SIGMET number and cancels the previous SIGMET. Update the start time of the new, corrected SIGMET and leave the end valid time the same as the original SIGMET. At the end of the SIGMET, state “CORRECTS SIGMET {SERIES} {#}”, where {SERIES} is the SIGMET designator and {#} is the series number.

**NOTE: Amendments/corrections will carry the CURRENT time of the SIGMET being amended/corrected. The FAA uses a time matching system of replacing products and unless the product has time different than the previous issuance, it will not store.**

**6.11 RTD SIGMETs.** For SIGMETs delayed in transmission, add RRA after the date/time group on the WMO line for the first correction, RRB for the second, and continuing for all subsequent RTDs. Then add RTD after the date/time group on the FAA product line. The first time indicated is the issuance time and the ending valid time is unchanged.

**6.12 Phenomena Information.** A SIGMET will contain the following information, related to the specific phenomena and in the order indicated:

- a. Phenomenon and its description from section 6; e.g., SEV TURB.
- b. An indication whether the information is observed, using OBS or FCST. The time of observation will be given in UTC.
- c. Location (referring, where possible, to latitude and longitude and/or locations or geographic features which are well known internationally) and flight level (altitude).
- d. Movement towards or expected movement using sixteen points of the compass, with speed in knots, or stationary, if appropriate.
- e. Thunderstorm maximum height as FL.
- f. Changes in intensity; using as appropriate, the abbreviations Intensifying (INTSF), Weakening (WKN), or No Change (NC).
- g. On the last line, include an outlook beyond the valid period for forecast trajectory of a volcanic ash cloud or tropical cyclone.

**6.13 Interchange of SIGMETs between MWOs.** When hazardous weather covered by a SIGMET moves from one MWO’s area of responsibility (AOR) to an adjacent MWO’s AOR (such as a line or area of thunderstorms), the originating MWO will cancel its SIGMET and the adjacent MWO will issue a new SIGMET under a new SIGMET series identifier. The canceled

SIGMET will include information identifying the new SIGMET series. See the example on page 18.

**6.14 Continuous SIGMET Criteria Across Two MWO's Adjacent Boundaries.** When an area of continuous hazardous weather meeting SIGMET criteria extends from one MWO's AOR into another adjacent MWO's area (such as a line or area of thunderstorms), the two MWOs will coordinate and determine whether to issue two separate SIGMETs or have one MWO issue a single SIGMET for the hazardous weather in both areas.

**7. AIRMET.** AIRMETs are a concise description - in abbreviated language - of the development and occurrence or expected occurrence in time and space of specified en-route weather phenomena. The intensities are lower than those which trigger SIGMETs, even though the phenomena can still affect the safety of aircraft operations. AIRMETs are intended for dissemination to all pilots in flight to enhance safety, and are of particular concern to operators and pilots of aircraft sensitive to the phenomena described and to pilots without instrument ratings. Freezing level information is also included.

**7.1 AIRMET Criteria.** An AIRMET will be issued when any of the following weather phenomena occur and affect an area of at least 3,000 square miles:

- |    |  |  |
|----|--|--|
| a. | Sustained surface wind greater than 30 knots   | STG SFC WND                              |
| b. | Ceiling LT 1000 feet and/or visibility LT 3SM plus weather phenomena causing the reduction to visibility | IFR, CIG BLW 010<br>IFR, VIS BLW 3 SM BR |
| c. | Widespread mountain obscurement  | MT OBSC                                  |
| d. | Moderate turbulence  | MOD TURB                                 |
| e. | Moderate icing   | MOD ICE                                  |
| f. | Nonconvective LLWS potential below 2,000 ft  | LLWS POTENTIAL                           |

**7.2 AIRMET Bulletins.** AIRMETs are issued in AIRMET bulletins, each containing one or more AIRMET messages. The bulletins will be issued on a scheduled basis every 6 hours and, except in Alaska, beginning at 0200 UTC. In Alaska, AIRMET bulletins are issued every six hours at the same time as the FA. An AIRMET bulletin is issued for each forecast area and will not contain unnecessary descriptive material.

**7.3 SIGMET Information in AIRMET Bulletin.** A reference to the appropriate SIGMET series is included in AIRMET bulletins which cover the affected area for similar phenomena; for example, "SEE SIGMET BRAVO SERIES FOR SEV TURB AREA".

**7.4 Time of Issuance.** AIRMETs may be issued for conditions expected to develop within the six (6) hour valid time of the current AIRMET Bulletin.

**7.5 Valid Period.** An AIRMET's valid period may not exceed the AIRMET bulletin's valid time.

**7.6 AIRMET Updates and Amendments.** Unscheduled updates to AIRMET bulletins are issued as necessary. If an AIRMET is amended, it will contain AAA on the WMO line for the first amendment, AAB for the second, and continuing for all subsequent amendments. Then add AMD after the date/time group on the FAA product line. Further, because AIRMETs can be lengthy, section 4.f describes how to make identification of amendments easier for the user.

**7.7 AIRMET Corrections.** AIRMETs containing errors will be corrected. To do this, add CCA after the date/time group on the WMO line for the first correction, CCB for the second, and continuing for all subsequent corrections. Then add COR after the date/time group on the FAA product line. The first time indicated is the issuance time, with the ending valid time unchanged. Further, because AIRMETs can be lengthy, section 4.f describes how to make identification of corrections easier for the user.

**NOTE: Amendments and corrections will carry the CURRENT time of the AIRMET being corrected. The FAA uses a time matching system of replacing products and unless the product has time different than the previous issuance, it will not store.**

**7.8 RTD AIRMETs.** For AIRMETs delayed in transmission, add RRA after the date/time group on the WMO line for the first correction, RRB for the second, and continuing for all subsequent RTDs. Then add RTD after the date/time group on the FAA product line. The first time indicated is the issuance time, with the ending valid time unchanged.

**7.9 Phenomena Information.** An AIRMET message will contain the following information as necessary and in the order indicated relating to the phenomena which caused the AIRMET to be issued:

- a. Location (using locations or geographic features well known nationally if possible).
- b. Phenomenon and its description from section 7.1; e.g., MOD TURB.
- c. If appropriate, level (Altitude), or vertical extent.
- d. If appropriate, movement or expected movement with reference to eight points of the compass, given in knots, or stationary.
- e. If appropriate, cause of phenomena. If cause is due to a tropical cyclone it should be referenced; for example DUE TO TC (HURCN) name.
- f. Expected beginning and ending time of phenomena, if different from the AIRMET bulletin's valid time.

g. Remarks.

h. Changes in intensity; using as appropriate, the abbreviations INTSF (DTRT for IFR and MT OBSC AIRMETs) , WKN (IMPR for IFR and MT OBSC AIRMETs), or NC.

**7.10 AIRMET Remarks.** The continuance or change of existing conditions which are expected to continue after the valid time of the AIRMET will be included in remarks.

**7.11 AIRMET Outlook (Except Alaska).** If AIRMET conditions are expected to develop after the ending valid time of the AIRMET bulletin, that information will be included in an outlook section.

**7.12 AIRMET Outlook (Alaska Only).** If AIRMET conditions are expected to develop after the ending valid time of the AIRMET bulletin, that information will be included in the appropriate FA zone.

**7.13 AIRMET Dissemination.** AIRMET bulletin messages should be disseminated to MWOs, WAFCs, Regional Area Forecast Centers (RAFC) as appropriate, and other meteorological offices, in accordance with regional air navigation agreements.

**8. Volcanic Ash Advisory (VAA).** VAACs issue VAAs when airborne volcanic ash is observed or reported which may affect the atmosphere in the VAAC's AOR. The VAA is intended as guidance to support MWOs in meeting their responsibility to issue the volcanic ash SIGMET. The VAA also may be issued as a watch for an imminent eruption expected to produce airborne ash.

**8.1 VAA Responsibility.** The U.S. has two VAACs with responsibilities defined in ICAO Annex 3. The Washington VAAC is jointly managed by the National Environmental Satellite Data and Information Service (NESDIS) Satellite Analysis Branch (SAB) and the NWS National Centers for Environmental Prediction (NCEP) Central Operations (NCO). The Anchorage VAAC is managed by the AAWU. The areas of responsibility for each VAAC are:

a. Washington VAAC

- (1) FIRs in CONUS and adjacent coastal waters.
- (2) The Oakland Oceanic FIR over the Pacific Ocean.
- (3) The New York FIR over the western Atlantic Ocean.
- (4) FIRs over and adjacent to the Caribbean, and Central and South America north of 10 degrees south latitude.

b. Anchorage VAAC

- (1) The Anchorage FIR

- (2) Russian FIRs north of 60 degrees north latitude and east of 150 degrees east longitude.

**8.2 VAA Issuance and Update Times.** The VAA is issued as soon as possible after credible information is received on the presence of airborne volcanic ash in the VAAC's AOR, or when responsibility for an existing VAA is transferred between VAACs. The VAA contains information on an ash cloud up to 18 hours. It may be issued any time to account for changing or new information. Any necessary updates are issued at a minimum of every 6 hours.

**8.3 VAA Content.** The VAA will follow international recommendations contained in ICAO Annex 3, chapter 3.6.2 (an example is in section 10) and will contain the name of the erupting volcano and number, if known; its location (latitude and longitude) and summit height (in meters or feet); the information source; the volcano aviation color code if applicable; eruption details; the date and time of the observed ash; information about the observed ash cloud; the forecast area and height of the ash cloud at 6, 12, and 18 hours after the issuance of the VAA; any pertinent remarks on the eruption/ash event; and the next VAA issuance time.

A VAA watch is not an official WMO/ICAO product. However, if it is issued, it will contain all information **except** for the eruption details, and observed and forecast ash clouds. Information on the direction the ash likely will spread in the event of an eruption will be included in remarks. In Alaska, a VAA watch is issued for a non-erupting seismically monitored volcano in color code orange or red. A one-time VAA Watch is issued when a monitored Alaska volcano goes from color code green to yellow.

**8.4 VAA Cancellation.** The VAA will be canceled when it is determined airborne volcanic ash is no longer a threat to aircraft or has moved out of the VAAC's AOR.

**8.5 Interchange of VAAs among Volcanic Ash Advisory Centers (VAAC).** When an ash cloud is forecast to move from one VAAC's AOR into another VAAC's AOR, the two VAACs will coordinate by telephone or telephone fax on handoff procedures. The VAAC passing off responsibility will include in remarks of its last VAA the name of the VAAC assuming responsibility for issuing subsequent VAAs for the event, the new WMO header, and the date/time of next expected issuance. The accepting VAAC will include in remarks the name of the VAAC from which it is accepting responsibility and the WMO header of the current VAA it will be updating. Generally, only one (1) VAAC will issue VAAs for a particular ash event. If the ash area affects more than one VAAC AOR, the VAAC issuing the VAA will include the entire ash area in the advisory. In the rare situation of large or persistent ash emissions, adjacent responsible VAACs, upon coordination, may agree to divide operational responsibilities.

**8.6 VAA Dissemination.** VAAs will be disseminated to MWOs, Area (Traffic) Control Centers, WAFCs, relevant RAFCs, international operational meteorological data banks, and other government and commercial meteorological offices, in accordance with regional air navigation agreements.



**9. International Aviation Route Forecasts (ROFOR).** International ROFORs are prepared for and issued several hours in advance of regularly scheduled flights. The only NWS office which routinely issues ROFORs is Weather Forecast Office (WFO) Honolulu due to its designation as an ICAO MWO.

**9.1 ROFOR Criteria.** WFO Honolulu will honor all ROFOR requests for flights within the Pacific Region beginning or ending in, or having most of the flight path within its AOR, which is the Oakland Oceanic FIR south of 30N, between 140W and 130E.

**9.2 Issuance Time.** ROFORs are issued for prescribed times, several hours in advance, for regularly scheduled flights. ROFOR requests for unscheduled flights will be prepared as soon as time allows.

**9.3 ROFOR Amendments.** ROFORs are not amended.

**9.4 ROFOR Corrections.** ROFOR corrections will be issued as soon as possible when erroneous data has been transmitted.

**9.5 ROFOR Content.** ROFORs contain some or all of the following forecast parameters:

- a. Winds and temperatures aloft
- b. Significant en-route weather
- c. Zone weather
- d. Weather Synopsis.

At a minimum, ROFORs include a. and b. above. They may contain data for multiple altitudes and include TAFs for destination points and/or alternates.

**10. Examples.**

**a. SIGMETS**

WSNT03 KKCI 081451

SIGA0C

KZNY SIGMET CHARLIE 11 VALID 081500/082100 KKCI-

NEW YORK OCEANIC FIR TC KYLE OBS N3106 W07118 AT 1500Z CB TOP FL500 WI  
80NM OF CENTER MOV SSW 5KT NC FCST 2100Z TC CENTER N 2930 W07130 OTLK  
TC CENTER 090000 N3018 W07142 091200 UTC N2918 W07224

WSUS01 KKCI 050600

WS1R

BOSR WS 050600

SIGMET ROMEO 2 VALID UNTIL 051000  
ME NH VT  
FROM CAR TO YSJ TO CON TO MPV TO CAR  
OCNL SEV TURB BLW 080 EXP DUE TO STG NWLY FLOW. CONDS CONTG BYD  
1000Z.

WSPA07 PHFO 010358  
SIGPAT  
KZOA SIGMET TANGO 1 VALID 010400/010800 PHFO-  
OAKLAND OCEANIC FIR  
EMBD TS OBS BY SATELLITE WITHIN 100 NM EITHER SIDE OF LINE  
N3006 W14012 - N2012 W15016. CB TO TOPS FL400. MOV W 10 KT. WKN.

WSPN04 KPCI 081529  
SIGP0D  
KZOA SIGMET DELTA 2 VALID 081530/081930 KPCI-  
OAKLAND OCEANIC FIR FRQ TS WI 60NM N3935 W16920 – N3414 W17050 – N3010  
W17325 TOP FL470 MOV NNE 10KT NC.

WSUS31 KPCI 101646  
SIGE  
MKCC WST 251655  
CONVECTIVE SIGMET 54C  
VALID UNTIL 1855Z

WI IL  
FROM 30E MSN-40ESE DBQ  
DMSHG LINE TS 15 NM WIDE MOV FROM 30025KT. TOPS TO FL450. WIND GUSTS TO  
50 KT POSS.

CONVECTIVE SIGMET 55C  
VALID UNTIL 1855Z  
TX OK NM  
FROM 70SE TBE-60NW AMA-40NW TCC-30ESE CIM-70SE TBE  
AREA SEV TS MOV FROM 33025KT. TOPS TO FL400.  
HAIL TO 2 IN...WIND GUSTS TO 70KT POSS.

OUTLOOK VALID 151855-152255  
FROM 60NW ISN-INL-TVC-SBN-BRL-FSD-BIL-60NW ISN  
WST ISSUANCES EXPD. REFER TO MOST RECENT ACUS01 KWNS FROM STORM  
PREDICTION CENTER FOR SYNOPSIS AND METEOROLOGICAL DETAILS.

**For transfer of SIGMET from one MWO to another:**

From the MWO handing off the SIGMET:

WSPA07 PHFO 020450

SIGPAT

KZOA SIGMET TANGO 3 VALID 020450/020500 PHFO-  
OAKLAND OCEANIC FIR. CANCEL SIGMET TANGO 2 020100/020500. REPLACED BY  
SIGMET BRAVO SERIES ISSUED BY KKCI.

From the MWO assuming responsibility of the SIGMET:

WSPN02 KKCI 020450

SIGP0B

KZOA SIGMET BRAVO 1 VALID 020450/020850 KKCI-  
OAKLAND OCEANIC FIR WDSR TS WITHIN AREA BOUNDED BY N0925 W14025  
N1245 W14025 - N1340 W13245 - N0835 W13350. TOPS TO FL450. MOV  
ENE 10KT. INTSF. BASED ON SAT AND LTG OBS. REPLACES SIGMET  
TANGO SERIES CANCEL BY PHFO.

**For Volcanic Ash:**

WVAK01 PAWU 190530

WSVAK1

ANCI UWS 190530

PAZA SIGMET INDIA 1 VALID 190530/190930 PANC-  
SATELLITE IMAGERY SHOWS DEVELOPING VA FROM ANOTHER POSSIBLE  
ERUPTION OF CHIKURACHKI VOLCANO AT 0500 UTC IN THE NORTHERN KURIL  
ISLANDS. HEIGHT IS ESTIMATED AT FL300 MOVEMENT IS E AT 75KTS.  
FURTHER UPDATES TO FOLLOW ASAP.

FCSTR APRIL 2003 AAWU

WVAK02 PAWU 190930

WSVAK2

ANCI UWS 190930

PAZA SIGMET INDIA 2 VALID 190930-191330Z PANC-

AT 0830 UTC SATELLITE IMAGERY SHOWED THE PLUME FROM THE 0500 UTC  
ERUPTION OF CHIKURACHKI VOLCANO IN THE NORTHERN KURIL ISLANDS  
BECOMING VERY DIFFUSE IN AN APPROXIMATELY 60 NM WIDE BAND FROM  
N48/E167 AND EXTENDING SE FOR 250 NM. HEIGHT IS ESTIMATED AT FL300.  
MOVEMENT IS E AT 90 KTS. THE PLUME IS MOVING SE OF ALASKA AIRSPACE  
INTO THE WASHINGTON VAAC AREA OF RESPONSIBILITY. SEE WASHINGTON  
VAAC VOLCANIC ASH SIGMETS AND ADVISORIES FOR FURTHER FORECASTS.

RB APRIL 2003

**(1) Corrected SIGMET**

WSUS31 KPCI 101656 CCA  
SIGE  
MKCE WST 101656 COR  
CONVECTIVE SIGMET 16E  
VALID UNTIL 1855Z  
SC FL GA AND CSTL WTRS  
FM 30ENE SAV-60ESE SAV-40ESE CRG-40W OMN-40ENE AMG-30ENE SAV  
AREA TS MOV FM 10020KT. TOPS ABV FL450.  
TS ASSOCIATED WITH TD KYLE.

OUTLOOK VALID 101855-102255  
FM ECG-140E PBI-VRB-160W PIE-LGC-CAE-ECG  
OCNL WST ISSUANCES EXPECTED. REFER TO MOST RECENT ACUS01 KWNS FM  
STORM PREDICTION CENTER FOR SYNOPSIS AND METEOROLOGICAL DETAILS.  
ALSO REFER TO MOST RECENT WTNT32 KNHC FM TROPICAL PREDICTION  
CENTER FOR DETAILS ON TROPICAL DEPRESSION KYLE.  
...COR FOR DISTANCE ON POINTS...

WSPA07 PHFO 010410  
SIGPAT  
KZOA SIGMET TANGO 2 VALID 010410/010800 PHFO-  
OAKLAND OCEANIC FIR FRQ TS OBS AND FCST WI 200NM N3006 W14012 - N2012  
W15016 CB TOP FL400 MOV W 10KT WKN CORRECTS DISTANCE TO WI 200NM OF  
LINE

**(2) Amended SIGMET**

WSPA07 PHFO 010530  
SIGPAT  
KZOA SIGMET TANGO 2 VALID 010530/010930 PHFO-  
OAKLAND OCEANIC FIR. AMENDS SIGMET TANGO 1  
EMBD TS OBS BY SATELLITE WITHIN 100 NM EITHER SIDE OF LINE  
N3006 W14012 - N2012 W15016. CB TO TOPS FL400. MOV W 10 KT. WKN.

**b. AIRMETs**

WAUS45 KPCI 121345  
WA5T  
.  
AIRMET TANGO UPDT 2 FOR TURB VALID UNTIL 122000.  
AIRMET TURB...NV UT CO AZ NM  
FROM LKV TO CHE TO ELP TO 60S TUS TO YUM TO EED TO RNO TO LKV  
OCNL MOD TURB BLW FL180 DUE TO MOD SWLY/WLY WND. CONDS CONTG BYD  
20Z THRU 02Z.

.  
AIRMET TURB...NV WA OR CA AND CSTL WTRS  
FROM BLI TO REO TO BTY TO DAG TO SBA TO 120W FOT TO 120W TOU TO BLI  
OCNL MOD TURB BTWN FL180 AND FL400 DUE TO WNDSHR ASSOC'D WITH JTSTR.  
CONDS CONTG BYD 20Z THRU 02Z.

....

WAHW31 PHFO 080945  
WA0HI

.  
HNLS WA 081000  
AIRMET SIERRA UPDATE 1 FOR IFR VALID UNTIL 081600.

.  
NO SIGNIFICANT IFR EXP.

.  
HNLT WA 081000  
AIRMET TANGO UPDATE 1 FOR TURB VALID UNTIL 081600

.  
AIRMET TURB...HI  
OVER AND IMT S THRU W OF MT OF ALL ISLANDS.  
TEMPO MOD TURB BLW 060. COND CONT BEYOND 1600Z.

.  
HNLZ WA 081000  
AIRMET ZULU UPDATE 1 FOR ICE AND FZLVL VALID UNTIL 081600

.  
NO SIGNIFICANT ICE EXP.

.  
FZLVL...140.

**(1) Corrected AIRMET**

WAUS45 KKCI 221955 CCA  
WA5Z

.  
SLCZ WA 222000 COR  
AIRMET ZULU UPDATE 3 FOR ICE AND FZ LVL VALID UNTIL 230200

.  
AIRMET ICE...ID MT WY CO...UPDT  
FROM GTF TO 80NW RAP TO BFF TO GLD TO DEN TO OCS TO TWF TO BOI TO GTF  
OCNL MOD RIME OR MXD ICGICIP ABV FZ LVL TO FL200. FZ LVLS SFC-080 OVR  
MOST OF AREA RSG TO 080-100 OVR SWRN PORTIONS AREA. CONDS  
DVLPG/SPRDG SLOLY SWD DURG PD...CONT BEYOND 02Z THRU 08Z.

.  
ELSW...NO SGNFT ICE EXP OUTSIDE OF CNVTV ACT.

.  
FZ LVL...SFC-080...N OF 90SSE GEG-DBS-OCS-CYS LN

...080-120...S OF 90SSE GEG-DBS-OCS-CYS LN  
...UPDT TO ADD CO TO STATES LINE...

.

c. FAs.

(1) CONUS

FAUS44 KPCI 030953  
FA4W  
DFWC FA 030945  
SYNOPSIS AND VFR CLDS/WX  
SYNOPSIS VALID UNTIL 040400  
CLDS/WX VALID UNTIL 032200...OTLK VALID 032200-040400  
OK TX AR TN LA MS AL AND COASTAL WATERS

.

SEE AIRMET SIERRA FOR IFR COND AND MT OBSC.  
TS IMPLY SEV OR GREATER TURB SEV ICE LLWS AND IFR COND.  
NON MSL HGT DENOTED BY AGL OR CIG.

.

SYNOPSIS...HRCN LILI MOV ONSHORE OVER CENTRAL LA COASTLINE. SEE  
LATEST ADVISORY FM NHC. QUASI-STNR FRONTAL SYSTEM EXTENDS FM N OH  
AND CENTRAL IN ACROSS S IL..SW MO..SW OK INTO SE CORNER OF NM. BY  
04Z...COLD FRONT WILL EXTEND FM A LOW OVER SE NE ACROSS CENTRAL KS  
AND W OK INTO BIG BEND AREA OF SW TX.

.

OK  
PANHANDLE/W OK...CIG OVC010. CLDS LYR TO FL240. OVC CI.  
VIS 3-5SM BR. BECMG 1618 CIG OVC015-025.  
WIDELY SCT -SHRA/ISOL EMBD -TSRA. CB TOPS FL350.  
OTLK...MVFR CIG TSRA BR.  
ERN OK...AGL SCT-BKN015-025. TOPS 030-050. VIS 3-5SM BR. BECMG  
1417 AGL SCT030-050. OTLK...VFR.

.

NW TX  
CIG010. CLDS LYR TO FL240. OVC CI. VIS 3-5SM BR.  
BECMG 1618 CIG OVC015-025. WIDELY SCT -SHRA/ISOL EMBD -TSRA. CB TOPS  
FL350. OTLK...MVFR CIG TSRA BR.

.

SW TX  
AGL SCT040-060. OTLK...VFR.

.

CENTRAL TX  
CIG BKN015-025. TOPS 030-050. VIS 3-5SM BR. BECMG 1417 AGL SCT030-050.  
OTLK...VFR.

.

E TX

SKC. OCNL SCT CI. BECMG 1316 AGL SCT030-050. OTLK...VFR.

.

AR

AGL SCT030-050. SCT-BKN100. TOPS FL200. BKN CI. OTLK...MVFR CIG TSRA BR.

.

LA

N LA...AGL SCT-BKN030-050. BKN100. TOPS FL240. BKN CI. ISOL -SHRA. BECMG 1618 CIG BKN030-050. WIDELY SCT TSRA/SHRA DEVELOPING. CB TOPS FL400. OTLK...MVFR CIG TSRA WIND.

S LA...CIG OVC010-020. CLDS Lyr TO FL280. OVC CI. OCNL RA/+RA...SCT +TSRA...POSS SEV. CB TOPS FL450. WND 14030G50KT.

E SECTIONS...WIND 30025G40KT. WIND DIMINISHING TO 20G30KT 19-22Z.

OTLK...MVFR CIG SHRA WIND.

.

TN

BKN CI. OCNL VIS 3-5SM BR TIL 14Z. OTLK...VFR.

.

MS AL

N AND CENTRAL MS-AL/SE AL...SCT-BKN100. BKN150. TOPS FL280.

BKN CI. BECMG 1618 AGL SCT-BKN050. BKN100. OVC150. OTLK...MVFR CIG TSRA.

S MS/SW AL...AGL SCT-BKN050. BKN100. OVC150. TOPS FL280. BKN CI. BECMG 1316 CIG OVC015-025. OCNL RA/SCT EMBD TSRA. CB TOPS FL410. OTLK...MVFR CIG TSRA.

.

COASTAL WATERS

W COASTAL WATERS...AGL SCT030-050. SCT CI. OTLK...VFR.

CENTRAL AND E COASTAL WATERS...CIG OVC010-020. CLDS Lyr TO FL280.

OVC CI. OCNL RA/+RA. SCT +TSRA. POSS SEV. CB TOPS FL450.

WIND 14030G60KT ERN SECTIONS...WIND 300025G60KT W SECTIONS. WIND DIMINISHING TO 20G40KT 19-22Z.

OTLK...MVFR CIG SHRA WIND.

## (2) Gulf of Mexico

FAGX20 KPCI 091812

OFAGX

FCST...091900Z-100700Z

OTLK...100700Z-101900Z

AMDTS NOT AVBL 0200Z-1100Z

.

INTERNATIONAL OPERATIONS BRANCH

AVIATION WEATHER CENTER KANSAS CITY MISSOURI

.

GULF OF MEXICO OFFSHORE WATERS N OF N27 W OF W85...COASTAL PLAINS COASTAL WATER AAF-BRO...HGTS MSL UNLESS NOTED.

TS IMPLY POSS SEV OR GREATER TURB...SEV ICE...LLWS AND STRONG SFC  
WND...HIGH WAVES...CIGS BLW 010. AND VIS BLW 3 SM.

.  
01 SYNOPSIS...STNR FRONT ALONG N GULFMEX COAST...TSRA/SHRA VCY BDRY  
THRU PERIOD.

.  
02 FLIGHT PRECAUTIONS...  
TSRA...COASTAL PLAINS..COASTAL WATERS...OFFSHORE WATERS.  
IFR...COASTAL PLAINS...BRO-LEV..MSY-AAF.  
LIFR..COASTAL PLAINS...SJI-AAF.

.  
03 MARINE PRECAUTIONS...  
NONE.

.  
04 SIGNIFICANT CLD/WX...  
COASTAL PLAINS...  
BRO-BPT..BKN-OVC010-020. VIS 3-5SM BR. SCT SHRA/TSRA. OCNL VIS 1SM TSRA  
BR.  
OTLK...IFR CIG VIS SHRA TSRA BR.  
BPT-LEV...OVC010-020. VIS 3-5SM BR. SCT SHRA/TSRA. OCNL VIS 1SM  
TSRA BR. OTLK...IFR CIG VIS SHRA TSRA BR.  
LEV-MSY...BKN015-030. WIDELY SCT SHRA/TSRA. OTLK...IFR CIG VIS SHRA TSRA  
BR.  
MSY-MOB...BKN015-030. SCT SHRA/TSRA. WIDELY SCT SHRA/TSRA SE PORTION.  
OTLK...IFR  
CIG VIS SHRA TSRA BR.  
MOB-SJI...SCT-BKN030 BKN100. ISOL SHRA. OTLK...MVFR CIG SHRA TSRA.  
SJI-AAF...SCT-BKN025. WIDELY SCT TSRA/SHRA. AFT 03Z..OCNL BKN-OVC004 TOPS  
015 VIS 2SM BR. OTLK...MVFR CIG BR BECMG IFR CIG VIS BR AFT 08Z.

.  
COASTAL WATERS...  
BRO-BPT...BKN-OVC015-030. SCT SHRA/TSRA. OTLK...IFR CIG VIS SHRA TSRA BR.  
BPT-LEV...BKN015-030. SCT SHRA TSRA. OTLK...IFR CIG SHRA TSRA.  
LEV-SJI...SCT030. .ISOL SHRA TSRA BECMG WIDELY SCT AFT 21Z.  
OTLK...IFR CIG VIS SHRA TSRA BR.  
SJI-AAF...SCT-BKN025. WIDELY SCT TSRA/SHRA. 01Z SCT040. OTLK...MVFR VIS BR.

.  
OFFSHORE WATERS...  
W OF W90...SCT-BKN020 SCT-BKN060 TOPS ABV 120. WIDELY SCT SHRA/TSRA. VIS  
3-5SM TSRA BR. OTLK...MVFR CIG VIS TSRA BR.  
E OF W90...SCT020. OTLK...VFR.

.  
05 ICE AND FZ LVL BLW 120...

NO SIGNIFICANT ICE EXPECTED OUTSIDE CONVECTIVE ACT.  
FZ LVL ABV 120 THROUGHOUT.



.  
06 TURB BLW 120...

NO SIGNIFICANT TURB EXPECTED OUTSIDE CONVECTIVE ACT.

.  
07 WIND BLW 120...

SFC-030...WIND SE-NW..5-21KT.

ABV 030...WIND VARIABLE 06-19KT.

09/2100Z	SFC	030	060	090	120
CRP	120/ 6	150/ 1	300/ 7	300/ 9	290/12
GLS	130/ 7	250/ 3	280/ 7	250/ 9	240/13
LFT	140/11	160/23	170/17	170/18	180/19
MOB	150/ 9	150/13	170/15	160/14	180/14
N28 W95	110/ 7	350/ 5	310/ 6	250/ 6	230/ 9
N28 W92	160/18	180/21	190/16	190/17	200/17
N28 W89	130/10	150/14	150/15	140/19	160/13
N28 W86	90/ 7	110/ 9	110/14	120/13	110/10

10/0000Z	SFC	030	060	090	120
CRP	140/ 8	160/ 1	320/10	310/ 9	290/12
GLS	170/ 2	300/ 4	300/ 5	250/ 8	240/13
LFT	150/ 9	170/23	180/18	190/18	200/18
MOB	150/ 8	150/13	160/15	170/15	180/15
N28 W95	170/ 3	10/ 5	340/ 3	250/ 4	240/ 7
N28 W92	170/17	190/20	190/16	190/16	200/16
N28 W89	130/11	150/15	150/15	150/15	180/11
N28 W86	90/ 9	100/11	110/14	120/11	120/ 8

10/0300Z	SFC	030	060	090	120
CRP	160/ 7	50/ 2	330/10	310/14	270/13
GLS	280/ 2	330/ 6	290/ 4	250/ 9	240/12
LFT	160/ 9	190/23	190/18	190/18	210/17
MOB	140/ 8	150/15	160/16	160/15	180/14
N28 W95	270/ 2	10/ 4	340/ 3	260/ 4	250/ 6
N28 W92	160/16	190/19	190/16	190/16	200/16
N28 W89	130/12	150/17	150/16	150/12	180/ 9
N28 W86	90/ 8	100/14	120/15	120/11	130/ 8

10/0600Z	SFC	030	060	090	120
CRP	180/ 4	70/ 3	340/ 9	310/15	260/13
GLS	330/ 2	340/ 5	290/ 5	260/ 8	230/11
LFT	160/ 9	190/22	200/19	200/19	210/18
MOB	150/ 8	150/19	160/20	160/17	180/14
N28 W95	350/ 1	30/ 3	320/ 3	250/ 4	240/ 6
N28 W92	160/17	180/19	190/16	190/16	200/17
N28 W89	140/12	140/18	140/16	150/11	180/ 7
N28 W86	80/ 8	110/16	130/14	130/10	140/ 5

.  
08 WAVES...

COASTAL WATERS BRO-40W LEV...3-4 FT. OTLK...NOSIG.

COASTAL WATERS W40 LEV-AAF...1-2 FT. OTLK...NOSIG.

OFFSHORE WATERS W OF W3W...3-4 FT. OTLK...NOSIG.

OFFSHORE WATERS E OF W93...1-2 FT. OTLK...NOSIG.

....

**(3) Caribbean**

FACA20 KKCI 091524

OFAMKC

INTERNATIONAL OPERATIONS BRANCH

AVIATION WEATHER CENTER KANSAS CITY MISSOURI

VALID 091800-100600

OUTLOOK...100600-101800

.  
ATLANTIC S OF N32 W OF W57...CARIBBEAN...GULF OF MEXICO AND ADJ COAST N  
OF N23...AND FLORIDA SFC TO 400 MB. TSRA IMPLY POSS SEV OR GREATER  
TURB...SEV ICE...LO LVL WS AND STRONG SFC WIND AND CIGS BLW 010 AND VIS  
BLW 3SM.

.  
SYNOPSIS...TD KYLE NEAR N28.5 W74.5. MAX WIND 30KT. KYLE TO MOVE TO N27.7  
W77.9

TONIGHT AND NEAR N27.7 W79.9 BY OTLK PERIOD....SEE LATEST TPC ADVISORY  
ON TD KYLE...

TROPICAL WAVES ALONG W83 S OF N22 MOV W 10-15KT AND W71 S OF N20 MOV  
W 10KT.

ISOL-WIDELY SCT TSRA ASSOCIATED WITH THE WAVES. STNR FRONT ALONG N  
GULFMEX COAST...ISOL TSRA/SHRA VCY BDRY THRU PERIOD.

.  
SIGNIFICANT CLD/WX...

SE TX AND COASTAL WATERS

BKN-OVC010-020. VIS 3-5SM BR. SCT SHRA/TSRA. TOPS ABV FL240.

OTLK...MVFR CIG SHRA TSRA.

COASTAL WATERS...BKN015-030 BKN080. SCT SHRA TSRA. TOPS FL200.

OTLK...MVFR CIG SHRA TSRA W OF IAH...IFR CIG SHRA TSRA E OF IAH.

.  
S LA/MS/AL AND COASTAL WATERS

LA

SW PORTION...OVC010-020. VIS 3-5SM BR. SCT SHRA/TSRA. TOPS ABV FL240.

OTLK...IFR CIG SHRA TSRA.

SE PORTION...BKN015-030 OVC060. WIDELY SCT SHRA TSRA. TOPS FL200.

OTLK...IFR CIG VIS SHRA TSRA BR.

.  
MS

BKN015-030 OVC060. SCT SHRA TSRA W PORTIONS. WIDELY SCT SHRA TSRA SE PORTION. TOPS ABV FL240. OTLK...IFR CIG SHRA TSRA.

AL

S HALF...BKN020 TOPS 060. 21Z SCT-BKN030 BKN100. ISOL SHRA. TOPS 150. OTLK...MVFR CIG SHRA TSRA.

.  
COASTAL WATERS

SW LA...BKN015-030 BKN080. SCT SHRA TSRA. TOPS FL200. OTLK...IFR CIG SHRA TSRA.

SE LA MS AL...SCT-BKN030. TOPS FL200. ISOL SHRA TSRA BECMG WIDELY SCT AFT

21Z. OTLK...IFR CIG VIS SHRA TSRA BR.

.  
GULFMEX HOUSTON FIR AND GULFMEX MIAMI FIR

W OF W90...SCT-BKN020 SCT-BKN060 TOPS 140. WIDELY SCT SHRA/TSRA. N OF N25..VIS 3-5SM TSRA BR. OTLK...MVFR CIG VIS TSRA BR.

E OF W90...SCT020. OTLK...VFR.

.  
FL AND COASTAL WATERS

PANHANDLE...SCT-BKN025 TOPS ABV FL240. WIDELY SCT TSRA/SHRA. AFT 03Z..OCNL CIG BLW 010 VIS BLW 3SM BR. OTLK...MVFR CIG BR BECMG IFR CIG VIS BR AFT 08Z.

N PENINSULA...SCT-BKN025 TOPS ABV FL240. WIDELY SCT TSRA/SHRA. 01Z SCT040. OTLK...MVFR VIS BR.

CENTRAL/S PENINSULA AND KEYS...SCT030-040. ISOL SHRA S OF MIA-FMY. OTLK...VFR..ERN PORTION..MVFR VIS BR.

.  
COASTAL WATERS

ATLANTIC...SCT040. ISOL SHRA. OTLK...VFR WIND.

GULFMEX...SKC. OCNL SCT040. ISOL SHRA/TSRA. OTLK...VFR.

.  
ATLANTIC SW NEW YORK FIR

...SEE LATEST TPC ADVISORY ON TD KYLE...

W OF W70...SCT-BKN020 BKN060 TOPS TO FL200. WIDELY SCT SHRA/ISOL TSRA. SFC WIND VARIABLE 25-30KT. OTLK...VFR TSRA WIND.

BTN W60 AND W70...SCT030. ISOL SHRA. OTLK...VFR.

E OF W60...SCT015 BKN040-060 TOPS LVR ABV FL240. WIDELY SCT TSRA. TS IN LINES/CLUSTERS. OTLK...VFR TSRA.

.  
ATLANTIC MIAMI FIR

N OF N24...SCT-BKN020 BKN060 TOPS TO FL200. WIDELY SCT SHRA/ISOL TSRA. SFC WIND VARIABLE 25-30KT. OTLK...VFR TSRA WIND.

S OF N24...SCT030. ISOL SHRA/TSRA. OTLK...VFR .

.  
SAN JUAN FIR

SCT-BKN015-025. TOPS LVR ABV FL240. WIDELY SCT SHRA/TSRA.

00Z SCT020. TIL 04Z WIDELY SCT SHRA/TSRA. OTLK...VFR TSRA.

.

W PIARCO FIR

S OF N12...BKN-SCT020 BKN080 TOPS 160. SCT SHRA/WIDELY SCT TSRA.

OTLK...MVFR CIG SHRA.

N OF N12...SCT020. ISOL SHRA/TSRA. OTLK...VFR TSRA.

.

SANTO DOMINGO FIR...PORT-AU-PRINCE FIR...HABANA FIR

OVER ISLANDS...SCT025. WIDELY SCT SHRA/TSRA. OTLK...MVFR VIS BR.

OVER WATERS...SKC-SCT025. ISOL SHRA/TSRA. OTLK...VFR SHRA.

.

N MAIQUETIA FIR...CURACAO FIR...N BARRANQUILLA FIR...N PANAMA FIR  
SCT030. ISOL TSRA N PANAMA FIR. WIND E 20KT. OTLK...VFR WIND.

.

KINGSTON FIR...NE CENTRAL AMERICA FIR

SCT020. ISOL SHRA. OTLK...VFR.

.

N MERIDA FIR

SCT020 SCT-BKN060 TOPS TO 150. ISOL TSRA. OTLK...VFR TSRA.

.

E MONTERREY FIR

SCT-BKN020 SCT-BKN060 TOPS 140. WIDELY SCT SHRA/TSRA. OTLK...MVFR CIG  
VIS TSRA BR.

.

ICE AND FZ LVL...

NO SIGNIFICANT ICE EXPECTED OUTSIDE CONVECTIVE ACT. FZ LVL 140-160 THRU  
TROP.

.

TURB...

NO SIGNIFICANT TURB EXPECTED OUTSIDE CONVECTIVE ACT.

....

**(4) Hawaii**

FAHW31 PHFO 080940

FA0HI

.

HNLC FA 080940

SYNOPSIS AND VFR CLD/WX

SYNOPSIS VALID UNTIL 090400

CLD/WX VALID UNTIL 082200...OUTLOOK VALID 082200-090400

.

SEE AIRMET SIERRA FOR IFR CLD AND MT OBSC.

TS IMPLY SEV OR GREATER TURB SEV ICE LOW LEVEL WS AND IFR COND.

NON MSL HGT DENOTED BY AGL OR CIG.

.

SYNOPSIS...SFC HIGH FAR N PHNL NEARLY STNR.

.  
BIG ISLAND ABOVE 060.

SKC. 20Z SCT090. OUTLOOK...VFR.

.  
BIG ISLAND LOWER SLOPES...COASTAL AND ADJ WATERS FROM UPOLU POINT TO CAPE KUMUKAHI TO APUA POINT.

SCT030 BKN050 TOPS 080 ISOL BKN030 VIS 3-5SM -SHRA BR TIL 20Z ISOL BKN010 VIS BELOW 3SM SHRA BR. 21Z SCT030 SCT-BKN050 TOPS 080 ISOL BKN030 5SM -SHRA. OUTLOOK...VFR.

.  
BIG ISLAND LOWER SLOPES FROM APUA POINT TO SOUTH CAPE TO UPOLU POINT. SKC. 21Z SCT-BKN060 TOPS 080. 23Z SCT030 SCT-BKN060 TOPS 080 ISOL BKN030 -SHRA. OUTLOOK...VFR.

.  
BIG ISLAND COASTAL AND ADJ WATERS FROM SOUTH CAPE TO PHKO TO UPOLU POINT.

SCT050 ISOL BKN050 TOPS 080. 18Z FEW050. 23Z SCT-BKN050 TOPS080. OUTLOOK...VFR.

.  
N AND E FACING SLOPES...COASTAL AND ADJ WATERS OF THE REMAINING ISLANDS.

SCT020 BKN045 TOPS070 TEMPO BKN020 VIS 3-5SM -SHRA...FM OAHU EASTWARD ISOL CIG BLW 010 AND VIS BELOW 3SM SHRA BR WITH TOPS 120. 22Z SCT025 SCT-BKN050 TOPS 070 ISOL BKN025 3-5SM -SHRA. OUTLOOK...VFR.

.  
REST OF AREA.

SCT035 SCT-BKN050 TOPS 070 ISOL BKN030 -SHRA. 20Z SCT050 ISOL SCT030 BKN045 TOPS 070 -SHRA. OUTLOOK...VFR.

**(5) Alaska**

FAAK48 PAWU 251345

FA8H

ANCH FA 251345

AK SRN HLF EXC SE AK...

.  
AIRMETS VALID UNTIL 252000

TS IMPLY POSSIBLE SEV OR GREATER TURB SEV ICE LLWS AND IFR CONDS.  
NON MSL HEIGHTS NOTED BY AGL OR CIG.

.  
SYNOPSIS VALID UNTIL 260800

972 MB BRISTOL BAY LOW WL MOV N TO 50 S PAOM AT 987 MB BY END OF PD.  
ASSOCIATED OCCLUDED FRONT FM PALJ..KENNEDY ENTRANCE..SE WL MOV NE TO PAMH..PACV..SE  
BY 08Z.

.  
 COOK INLET AND SUSITNA VALLEY AB...VALID UNTIL 260200  
 ...CLOUDS/WX...  
 \*\*\*AIRMET IFR/MT OBSC\*\*\*AK RANGE/W SIDE COOK INLET..OCNL CIGS BLW 10  
 VIS BLW 3SM -RA BR. NC...  
 OTHERWISE..AK RANGE/W SIDE INLET..SCT005 OVC020 VIS 3-5SM -RA BR.  
 ELSEWHERE..SCT025 BKN045 OVC080 LYR ABV TO FL250. OCNL BKN025 OVC045  
 -RA.  
 COOK INLET..SFC WND NE 20G30 KTS. THRU TERRAIN GAPS..ERN MTS/AK  
 RANGE..SFC WND E 30G60 KTS.  
 OTLK VALID 260200-262000...MVFR CIG RA WND.  
 PASSES...LAKE CLARK..MERRILL..RAINY..IFR CIG RA WND. WINDY..MVFR CIG RA.  
 PORTAGE..IFR CIG RA WND.  
 ...TURB...  
 \*\*\*SIGMET\*\*\*KILO 1 VALID 251607/252000 PANC-  
 OCNL SEV TURB FCST BLW 080 WI AN AREA FM TKA-JOH-MDO-AKN-SQA-TKA.  
 THIS IS THE AREA S OF A PAHZ-PATK LN.  
 \*\*\*AIRMET TURB/LLWS\*\*\*OCNL MOD TURB BLW 120. LLWS. NC...  
 ...ICE AND FZLVL...  
 \*\*\*AIRMET ICE\*\*\*OCNL MOD RIME/MX ICEIC 050-160. FZLVL 050. NC...  
 .  
 COPPER RIVER BASIN AC...VALID UNTIL 260200  
 ...CLOUDS/WX...  
 FEW045 SCT090 BKN-OVC180 TOP FL250.  
 SFC WND SE G 25 KTS.  
 WRN MTS..ISOL BKN025 OVC045 4SM -SHRA.  
 OTLK VALID 260200-262000...VFR.  
 PASS...TAHNETA..MVFR CIG.  
 ...TURB...  
 NIL SIG.  
 ...ICE AND FZLVL...  
 NIL SIG. FZLVL 050.  
 .  
 CNTRL GLF CST AD...VALID UNTIL 260200  
 ...CLOUDS/WX...  
 \*\*\*AIRMET MT OBSC\*\*\*MTS OBSCD IN CLDS/PRECIPITATION. NC...  
 SCT020 OVC040 LYRD ABV TO FL250 -RA.  
 OCNL SCT005 OVC020 VIS 3-5SM -RA BR.  
 SFC WND E 20G35 KTS. THRU TRRN GAPS WND E-NE 25G50 KTS.  
 ALONG KENAI PENINSULA..ISOL CIGS BLW 10 VIS BLW 3SM RA BR.  
 OTLK VALID 260200-260200..MVFR CIG RA WND.  
 ...TURB...  
 \*\*\*SIGMET\*\*\*KILO 1 VALID 251607/252000 PANC-  
 OCNL SEV TURB FCST BLW 080 WI AN AREA FM TKA-JOH-MDO-AKN-SQA-TKA.  
 THIS IS THE AREA E OF A JOH-PAMD LN.

\*\*\*AIRMET TURB/LLWS\*\*\*OCNL MOD TURB BLW 120. LLWS NR TRRN. NC...  
 ...ICE AND FZLVL...  
 \*\*\*AIRMET ICE\*\*\*OCNL MOD RIME ICEIC 050-160. FZLVL 050. NC...

.  
 KODIAK ISLAND AE...VALID UNTIL 260200  
 ...CLOUDS/WX...  
 \*\*\*AIRMET MT OBSC\*\*\*MTS OBSCD IN CLDS/PRECIPITATION. NC...  
 SCT020 OVC040 LYRD ABV TO FL250 -RA.  
 OCNL SCT005 OVC020 VIS 3-5SM -RA BR.  
 E SIDE..ISOL CIGS BLW 10 VIS BLW 3SM RA BR.  
 SFC WND SE G 25 KT.  
 OTLK VALID 260200-262000...MVFR CIG SHRA WND. AFT 06Z..VFR.  
 ...TURB...  
 NIL SIG.  
 ...ICE AND FZ LVL...  
 ISOL MOD RIME ICEIC 030-120. FZLVL 030.

**d. Tropical Cyclone**

FKNT24 KNHC 152044  
 TCANT4  
 TROPICAL CYCLONE MARCO ICAO ADVISORY NUMBER 6  
 NATIONAL WEATHER SERVICE MIAMI FL  
 2100Z TUE OCT 15 2002

TC ADVISORY

DTG	20021015/2100Z
TCAC:	KNHC
TC:	MARCO
NR:	6
POSITION:	N1906 W08212
MOV:	NNE 09KT
	996HPA
MAX WIND:	050KT
FCST PSN + 12 HR:	160600 N2024 W08054
FCST MAX WIND + 12 HR:	060KT
FCST PSN + 18 HR:	161200 N2124 W07948
FCST MAX WIND + 12 HR:	075KT
FCST PSN + 24HR:	161800 N2230 W07842
FCST MAX WIND + 24 HR:	080KT
NXT MSG:	20021016/0300Z

**e. Volcanic Ash Advisory.**

FVAK21 PAWU 190615

VOLCANIC ASH ADVISORY - ALERT

ISSUED 2003 APR 19/0615Z

VAAC: ANCHORAGE

VOLCANO: CHIKURACHKI, 900-36

LOCATION: N5019 E15527

AREA: KAMCHATKA NORTHERN KURIL ISLANDS

SUMMIT ELEVATION: 7674 FT (2339 M)

ADVISORY NUMBER: 2003-02

INFORMATION SOURCE: SATELLITE

AVIATION COLOR CODE: NOT GIVEN

ERUPTION DETAILS: A NEW ERUPTION OCCURRED AT APPROXIMATELY 190500 UTC. HEIGHT IS ESTIMATED AT FL300. ESTIMATE IS BASED ON OBSERVED AND MODEL WINDS. MOVEMENT APPEARS TO BE E AT 75 KTS.

OBS ASH DATA/TIME: 19/0500Z

OBS ASH CLOUD: VA EXTENDS FM NEAR VOLCANO EWD TO N50 E160.

FCST ASH CLOUD +6HR: 30NM EITHER SIDE OF LN FM NIPPI N49 E159 -  
N50 E175.

FCST ASH CLOUD +12HR: 30NM EITHER SIDE OF LN FM N50 E168 -  
N50 E180.

FCST ASH CLOUD +18HR: 30NM EITHER SIDE OF LN FM N51 E175 -  
N50 E185.

NEXT ADVISORY: 20030419/1500Z

REMARKS: UPDATES AS SOON AS INFO BECOMES AVAILABLE.

**f. ROFORs**

**Majuro to Kwajalein Route**



FROC32 PHFO 301857  
 RFRKWA  
 FOR WSO MAJURO  
 ROFOR VALID 2102 FOR ROUTE PKMJ TO PKWA AND RETURN  
 01208 4100P09 09010 4180M05 08015  
 SIGWX...NIL.

### **Tarawa to Majuro Route**

FROC33 PHFO 291510  
 RFRFFN  
 FOR PKMJYMYX  
 ROFOR VALID 2008 FOR ROUTE NGTA TO PKMJ  
 01205 4100P08 06010 4140P00 06015 4180M03 07020  
 01201 4100P08 09015 4140P00 09020 4180M04 10025  
 SIGWX...ISOL TCU/VIS 5SM SHRA  
 PKMJ 221120Z 221212 NIL=

### **Santa Barbara and San Francisco to Honolulu Route**

FRPN31 PHFO 301857  
 RFRKSF  
 WINDS/TEMPERATURES AND WEATHER BY ZONE FOR  
 ROUTE SFO/HNL VIA 31.3N/140W VALID AT 311200Z  
 FLIGHT LEVELS

ZONE	FL050	FL100	FL180	FL240	ZONE WEATHER
25	3315 P16	3208 P11	3109 M07	3216 M19	6-8 STSC 010/030
26	3316 P13	3211 P09	3117 M06	3023 M18	4-6 STSC 015/045
27	3013 P12	3212 P09	3020 M06	3024 M18	6-8 MERGING LVR 200 ISOL VIS 3-5SM RA ISOL TCU TOPS FL220
28	3008 P14	3008 P08	2815 M06	2918 M18	DO
29	9905 P14	9905 P08	2609 M06	2612 M18	4-6 CUSC 020/050
30	0506 P14	9905 P08	9905 M06	2406 M18	DO
31	0818 P15	0613 P09	0307 M06	9905 M18	4-6 CUSC 020/080 ISOL -SHRA
32	0822 P15	0719 P09	0711 M05	9905 M17	DO

### **OVERALL COMPONENTS**

P4	P2	M4	M10
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ROUTE SBA/HNL VIA 29.5N/140W VALID AT 311200Z

### **FLIGHT LEVELS**

ZONE	FL050	FL100	FL180	FL240	ZONE WEATHER
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25 3509 P17 3108 P11 3011 M07 3015 M19 6-8 STSC 010/030  
26 3416 P14 3312 P09 3218 M05 3123 M18 4-6 STSC 015/045  
27 0111 P13 3510 P10 3017 M05 3021 M18 2-4 CUSC 020/045  
28 0307 P14 3606 P09 2713 M05 2717 M18 DO  
29 0406 P14 9905 P08 2507 M05 2610 M18 4-6 CUSC 020/050  
30 0815 P15 0610 P09 9905 M05 9905 M17 DO  
31 0821 P15 0616 P09 0408 M05 9905 M18 4-6 CUSC 020/080  
ISOL -SHRA  
32 0822 P15 0719 P09 0812 M06 9905 M18 DO

**OVERALL COMPONENTS**

P10 P5 M4 M7  
SYNOPSIS...1024MB HIGH CENTERED NEAR 30N156W.

**APPENDIX A - WMO Headers****1. AWC.****a. SIGMET**CONUS and Coastal Waters

<b>WMO</b>	<b>AWIPS</b>	
WCUS01 KPCI	MKCWC1 (N-Y)*	(Formerly WSUS1 KBOS)
WSUS01 KPCI	MKCWS1 (N-Y)*	
WVUS01 KPCI	MKCWV1 (N-Y)*	
WCUS02 KPCI	MKCWC2 (N-Y)*	(Formerly WSUS1 KMIA)
WSUS02 KPCI	MKCWS2 (N-Y)*	
WVUS02 KPCI	MKCWV2 (N-Y)*	
WCUS03 KPCI	MKCWC3 (N-Y)*	(Formerly WSUS1 KCHI)
WSUS03 KPCI	MKCWS3 (N-Y)*	
WVUS03 KPCI	MKCWV3 (N-Y)*	
WCUS04 KPCI	MKCWC4 (N-Y)*	(Formerly WSUS1 KDFW)
WSUS04 KPCI	MKCWS4 (N-Y)*	
WVUS04 KPCI	MKCWV4 (N-Y)*	
WCUS05 KPCI	MKCWC5 (N-Y)*	(Formerly WSUS1 KSLC)
WSUS05 KPCI	MKCWS5 (N-Y)*	
WVUS05 KPCI	MKCWV5 (N-Y)*	
WCUS06 KPCI	MKCWC6 (N-Y)*	(Formerly WSUS1 KSFO)
WSUS06 KPCI	MKCWS6 (N-Y)*	
WVUS06 KPCI	MKCWV6 (N-Y)*	

\* Omit Sierra, Tango, and Zulu

**Convective SIGMETS**

WSUS31 KPCI	MKCSIGE	(Formerly WSUS40 KMKC)
WSUS32 KPCI	MKCSIGC	(Formerly WSUS41 KMKC)
WSUS33 KPCI	MKCSIGW	(Formerly WSUS42 KMKC)

New York, Miami, Houston, and San Juan Oceanic FIRs

WSNT01 KPCI	SIGA0A
WSNT02 KPCI	SIGA0B

WSNT03 KPCI	SIGA0C
WSNT04 KPCI	SIGA0D
WSNT05 KPCI	SIGA0E
WSNT06 KPCI	SIGA0F
WSNT07 KPCI	SIGA0G
WSNT08 KPCI	SIGA0H
WSNT09 KPCI	SIGA0I
WSNT10 KPCI	SIGA0J
WSNT11 KPCI	SIGA0K
WSNT12 KPCI	SIGA0L
WSNT13 KPCI	SIGA0M

WCNT01 KPCI	MKCWSTA0A
WCNT02 KPCI	MKCWSTA0B
WCNT03 KPCI	MKCWSTA0C
WCNT04 KPCI	MKCWSTA0D
WCNT05 KPCI	MKCWSTA0E
WCNT06 KPCI	MKCWSTA0F
WCNT07 KPCI	MKCWSTA0G
WCNT08 KPCI	MKCWSTA0H
WCNT09 KPCI	MKCWSTA0I
WCNT10 KPCI	MKCWSTA0J
WCNT11 KPCI	MKCWSTA0K
WCNT12 KPCI	MKCWSTA0L
WCNT13 KPCI	MKCWSTA0M

WVNT01 KPCI	MKCWSVA0A
WVNT02 KPCI	MKCWSVA0B
WVNT03 KPCI	MKCWSVA0C
WVNT04 KPCI	MKCWSVA0D
WVNT05 KPCI	MKCWSVA0E
WVNT06 KPCI	MKCWSVA0F
WVNT07 KPCI	MKCWSVA0G
WVNT08 KPCI	MKCWSVA0H
WVNT09 KPCI	MKCWSVA0I
WVNT10 KPCI	MKCWSVA0J
WVNT11 KPCI	MKCWSVA0K
WVNT12 KPCI	MKCWSVA0L
WVNT13 KPCI	MKCWSVA0M

Oakland Oceanic FIR

WSPN01 KPCI	MKCSIGP0A
WSPN02 KPCI	MKCSIGP0B
WSPN03 KPCI	MKCSIGP0C
WSPN04 KPCI	MKCSIGP0D

WSPN05 KKCI	MKCSIGP0E
WSPN06 KKCI	MKCSIGP0F
WSPN07 KKCI	MKCSIGP0G
WSPN08 KKCI	MKCSIGP0H
WSPN09 KKCI	MKCSIGP0I
WSPN10 KKCI	MKCSIGP0J
WSPN11 KKCI	MKCSIGP0K
WSPN12 KKCI	MKCSIGP0L
WSPN13 KKCI	MKCSIGP0M

WCPN01 KKCI	MKCWSTP0A
WCPN02 KKCI	MKCWSTP0B
WCPN03 KKCI	MKCWSTP0C
WCPN04 KKCI	MKCWSTP0D
WCPN05 KKCI	MKCWSTP0E
WCPN06 KKCI	MKCWSTP0F
WCPN07 KKCI	MKCWSTP0G
WCPN08 KKCI	MKCWSTP0H
WCPN09 KKCI	MKCWSTP0I
WCPN10 KKCI	MKCWSTP0J
WCPN11 KKCI	MKCWSTP0K
WCPN12 KKCI	MKCWSTP0L
WCPN13 KKCI	MKCWSTP0M

WVPN01 KKCI	MKCWSVP0A
WVPN02 KKCI	MKCWSVP0B
WVPN03 KKCI	MKCWSVP0C
WVPN04 KKCI	MKCWSVP0D
WVPN05 KKCI	MKCWSVP0E
WVPN06 KKCI	MKCWSVP0F
WVPN07 KKCI	MKCWSVP0G
WVPN08 KKCI	MKCWSVP0H
WVPN09 KKCI	MKCWSVP0I
WVPN10 KKCI	MKCWSVP0J
WVPN11 KKCI	MKCWSVP0K
WVPN12 KKCI	MKCWSVP0L
WVPN13 KKCI	MKCWSVP0M

**b. AIRMET**

The AWC issues six sets of three AIRMETs (e.g. SIERRA, TANGO AND ZULU)

WMO HEADER	AWIPS ID
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WAUS41 KKCI	MKCWA1 (S, T, Z)	(Formerly WAUS1 KBOS)
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WAUS42 KCCI	MKCWA2 (S, T, Z)	(Formerly WAUS1 KMIA)
WAUS43 KCCI	MKCWA3 (S, T, Z)	(Formerly WAUS1 KCHI)
WAUS44 KCCI	MKCWA4 (S, T, Z)	(Formerly WAUS1 KDFW)
WAUS45 KCCI	MKCWA5 (S, T, Z)	(Formerly WAUS1 KSLC)
WAUS46 KCCI	MKCWA6 (S, T, Z)	(Formerly WAUS1 KSFO)

**c. Area Forecast**

<b>WMO HEADER</b>	<b>AWIPS ID</b>	
FAUS41 KCCI	MKCFA1W	(Formerly FAUS5 KBOS)
FAUS42 KCCI	MKCFA2W	(Formerly FAUS5 KMIA)
FAUS43 KCCI	MKCFA3W	(Formerly FAUS5 KCHI)
FAUS44 KCCI	MKCFA4W	(Formerly FAUS5 KDFW)
FAUS45 KCCI	MKCFA5W	(Formerly FAUS5 KSLC)
FAUS46 KCCI	MKCFA6W	(Formerly FAUS5 KSFO)
FACA20 KCCI	OFAMKC	
FAGX20 KCCI	OFAGX	

**2. AAWU**

**a. SIGMET**

<b>WMO HEADER</b>	<b>AWIPS ID</b>	
WSAK01 PAWU	ANCSIGAK1	(Formerly WSPN01 PANC)
WSAK02 PAWU	ANCSIGAK2	
WSAK03 PAWU	ANCSIGAK3	
WSAK04 PAWU	ANCSIGAK4	
WSAK05 PAWU	ANCSIGAK5	
WSAK06 PAWU	ANCSIGAK6	
WSAK07 PAWU	ANCSIGAK7	
WSAK08 PAWU	ANCSIGAK8	
WSAK09 PAWU	ANCSIGAK9	
WCAK01 PAWU	ANCWSTAK1	(Formerly WSPN01 PANC)
WCAK02 PAWU	ANCWSTAK2	
WCAK03 PAWU	ANCWSTAK3	
WCAK04 PAWU	ANCWSTAK4	
WCAK05 PAWU	ANCWSTAK5	
WCAK06 PAWU	ANCWSTAK6	
WCAK07 PAWU	ANCWSTAK7	
WCAK08 PAWU	ANCWSTAK8	
WCAK09 PAWU	ANCWSTAK9	
WVAK01 PAWU	ANCWSVAK1	(Formerly WSPN01 PANC)

WVAK02 PAWU	ANCWSVAK2
WVAK03 PAWU	ANCWSVAK3
WVAK04 PAWU	ANCWSVAK4
WVAK05 PAWU	ANCWSVAK5
WVAK06 PAWU	ANCWSVAK6
WVAK07 PAWU	ANCWSVAK7
WVAK08 PAWU	ANCWSVAK8
WVAK09 PAWU	ANCWSVAK9

**b. AIRMET**

The AAWU issues three sets of three AIRMETs (e.g. SIERRA, TANGO AND ZULU)

WAAK47 PAWU	ANCWA7O	(Formerly WAAK01 PAJN)
WAAK48 PAWU	ANCWA8O	(Formerly WAAK01 PANC)
WAAK49 PAWU	ANCWA9O	(Formerly WAAK01 PAFA)

**c. FA**

WMO HEADER	AWIPS ID	
FAAK47 PAWU	ANCFA7H	(Formerly FAAK01 PAJN)
FAAK57 PAWU	ANCFA7W	(Formerly FAAK05 PAJN)
FAAK48 PAWU	ANCFA8H	(Formerly FAAK01 PANC)
FAAK58 PAWU	ANCFA8W	(Formerly FAAK05 PANC)
FAAK68 PAWU	ANCFA8T	(Formerly FAAK10 PANC)
FAAK49 PAWU	ANCFA9H	(Formerly FAAK01 PAFA)
FAAK59 PAWU	ANCFA9W	(Formerly FAAK05 PAFA)

**d. VAA**

WMO HEADER	AWIPS ID	
FVAK21 PAWU	ANCVAAAK1	(Formerly FVAK20 PANC)
FVAK22 PAWU	ANCVAAAK2	(Formerly FVAK21 PANC)
FVAK23 PAWU	ANCVAAAK3	(Formerly FVAK22 PANC)
FVAK24 PAWU	ANCVAAAK4	(Formerly FVAK23 PANC)
FVAK25 PAWU	ANCVAAAK5	(Formerly FVAK24 PANC)

**3. WFO Honolulu**

**a. SIGMET**

WMO Header	AWIPS ID
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WSPA01 PHFO	HFOSIGPAN	(Formerly WSPA31 PHFO)
WSPA02 PHFO	HFOSIGPAO	(Formerly WSPA32 PHFO)
WSPA03 PHFO	HFOSIGPAP	(Formerly WSPA33 PHFO)
WSPA04 PHFO	HFOSIGPAQ	(Formerly WSPA34 PHFO)
WSPA05 PHFO	HFOSIGPAR	(Formerly WSPA35 PHFO)
WSPA06 PHFO	HFOSIGPAS	
WSPA07 PHFO	HFOSIGPAT	
WSPA08 PHFO	HFOSIGPAU	
WSPA09 PHFO	HFOSIGPAV	
WSPA10 PHFO	HFOSIGPAW	
WSPA11 PHFO	HFOSIGPAX	
WSPA12 PHFO	HFOSIGPAY	
WSPA13 PHFO	HFOSIGPAZ	
WCPA01 PHFO	HFLOWSTPAN	(Formerly WCPA31 PHFO)
WCPA02 PHFO	HFLOWSTPAO	(Formerly WCPA32 PHFO)
WCPA03 PHFO	HFLOWSTPAP	(Formerly WCPA33 PHFO)
WCPA04 PHFO	HFLOWSTPAQ	(Formerly WCPA34 PHFO)
WCPA05 PHFO	HFLOWSTPAR	(Formerly WCPA35 PHFO)
WCPA06 PHFO	HFLOWSTPAS	
WCPA07 PHFO	HFLOWSTPAT	
WCPA08 PHFO	HFLOWSTPAU	
WCPA09 PHFO	HFLOWSTPAV	
WCPA10 PHFO	HFLOWSTPAW	
WCPA11 PHFO	HFLOWSTPAX	
WCPA12 PHFO	HFLOWSTPAY	
WCPA13 PHFO	HFLOWSTPAZ	
WVPA01 PHFO	HFOWSVPAN	(Formerly WVPA31 PHFO)
WVPA02 PHFO	HFOWSVPAO	(Formerly WVPA32 PHFO)
WVPA03 PHFO	HFOWSVPAP	(Formerly WVPA33 PHFO)
WVPA04 PHFO	HFOWSVPAQ	(Formerly WVPA34 PHFO)
WVPA05 PHFO	HFOWSVPAR	(Formerly WVPA35 PHFO)
WVPA06 PHFO	HFOWSVPAS	
WVPA07 PHFO	HFOWSVPAT	
WVPA08 PHFO	HFOWSVPAU	
WVPA09 PHFO	HFOWSVPAV	
WVPA10 PHFO	HFOWSVPAW	
WVPA11 PHFO	HFOWSVPAX	
WVPA12 PHFO	HFOWSVPAY	
WVPA13 PHFO	HFOWSVPAZ	

**b. AIRMET**

WAHW31 PHFO	WA0HI
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Note: Parsing is for geographical areas

**c. FA**

FAHW31 PHFO FA0HI

**4. SIGMET Naming Convention Across the Pacific Basin and the Anchorage FIR.** To avoid duplication of valid SIGMET series names in the Pacific Basin the MWOs have adapted a series naming convention where each uses a different portion of the ICAO Phonetic Alphabet.

AWC: ALPHA, BRAVO, CHARLIE, DELTA, ECHO, FOXTROT, GOLF and HOTEL

AAWU: INDIA, JULIET, KILO, LIMA and MIKE

WFO Honolulu: NOVEMBER, OSCAR, PAPA, QUEBEC, ROMEO, SIERRA, TANGO, UNIFORM, VICTOR, WHISKEY, XRAY, YANKEE and ZULU

If any MWO has more SIGMETs in effect than names assigned, they will follow these SIGMET naming procedures:

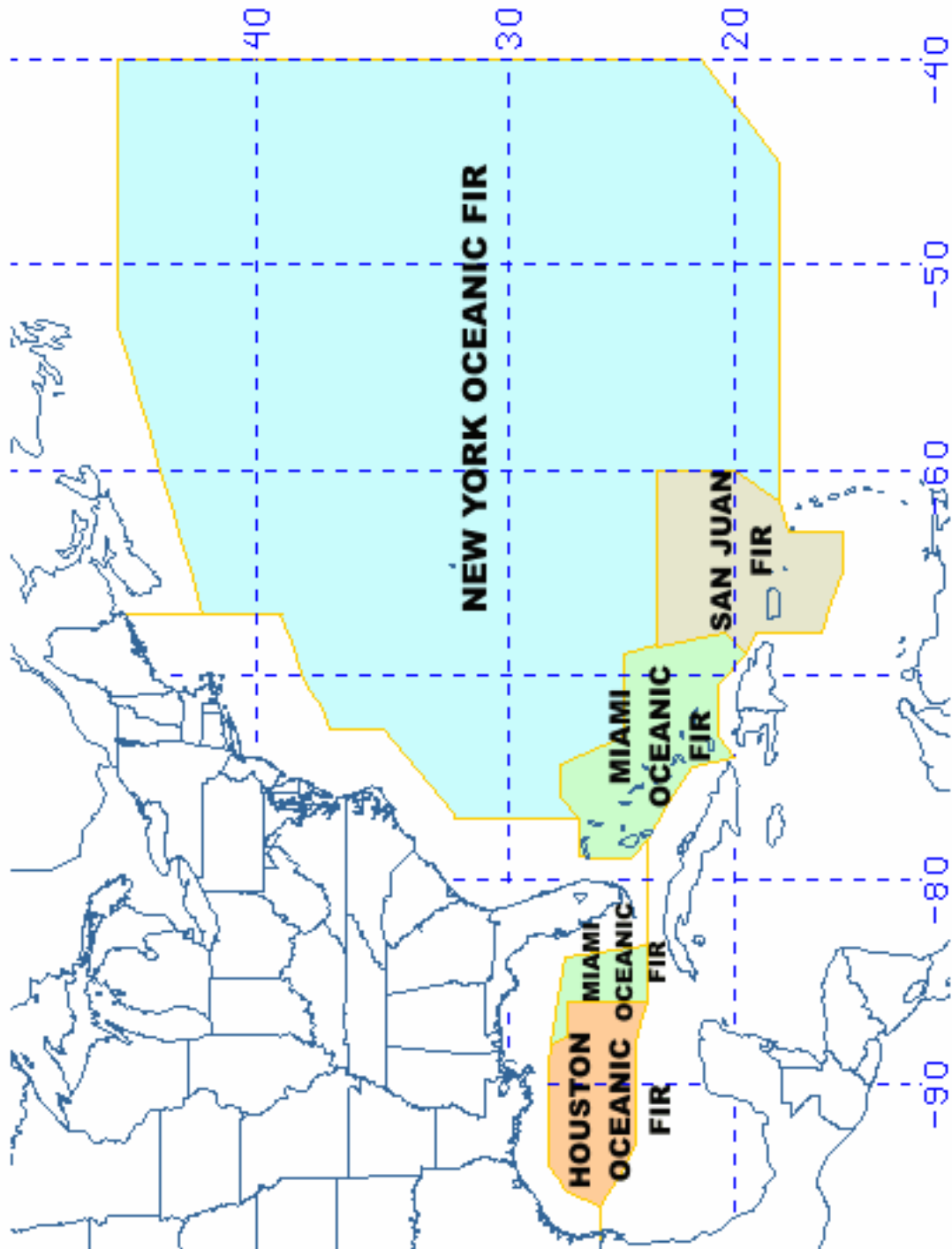
AWC: The AWC will cycle through the alpha names listed above. If all eight SIGMET alpha names are in use by the AWC, they will coordinate with the AAWU to temporarily use INDIA, JULIET, KILO, LIMA or MIKE. When the temporary need for the letter has ended, AWC will coordinate with AAWU to release the letter.

AAWU: The AAWU will cycle through the alpha names listed above. If all five SIGMET alpha names are in use by the AAWU, they will coordinate with WFO Honolulu to temporarily use NOVEMBER, OSCAR, PAPA, or QUEBEC. When the temporary need for the letter has ended, AAWU will coordinate with WFO Honolulu to release the letter.

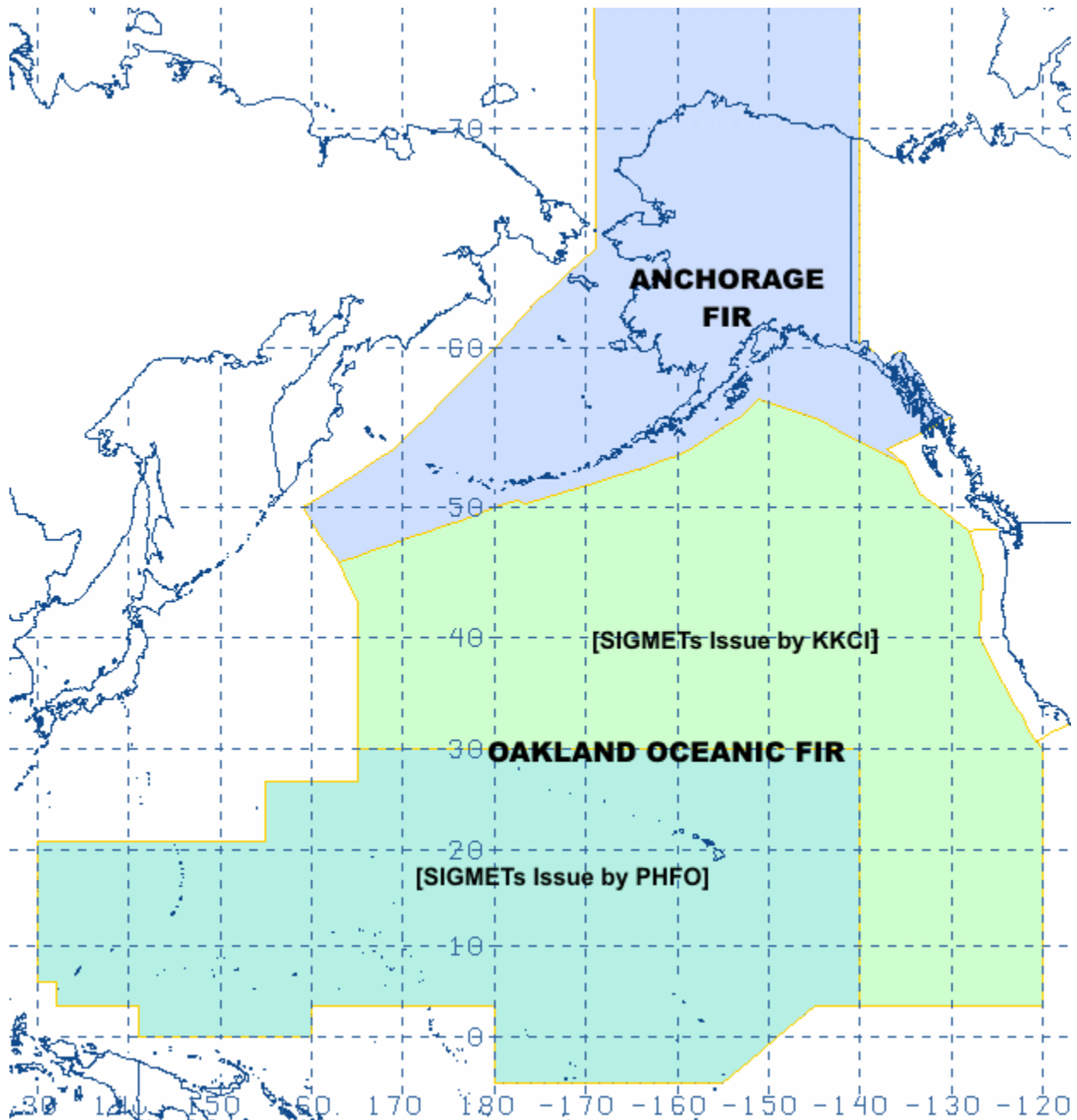
WFO Honolulu: WFO Honolulu will cycle through the alpha names listed above. If the AAWU is using an alpha name and WFO Honolulu needs to issue another SIGMET, they will skip the alpha name the AAWU is using and issue the next available name in the series.

**APPENDIX B - Areas of Responsibility**

**1. AWC SIGMET area of responsibility in the Atlantic Basin.**



2. SIGMET Areas of Responsibility in the Pacific Basin.



3. AWC Areas of responsibility for SIGMETs in Conterminous U.S.

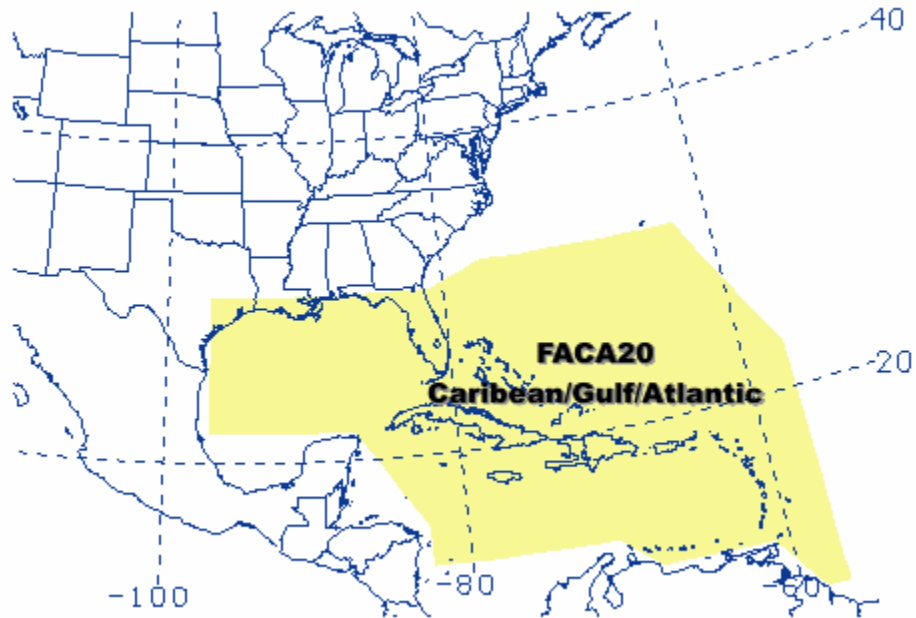


4. AWC FA Areas of Responsibility.

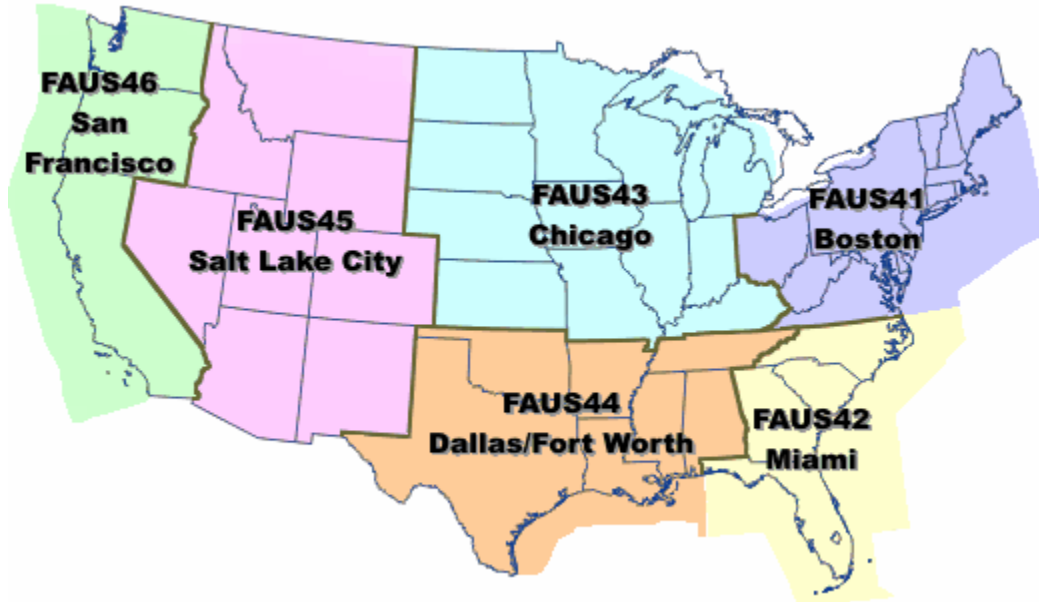
a. Gulf of Mexico FA



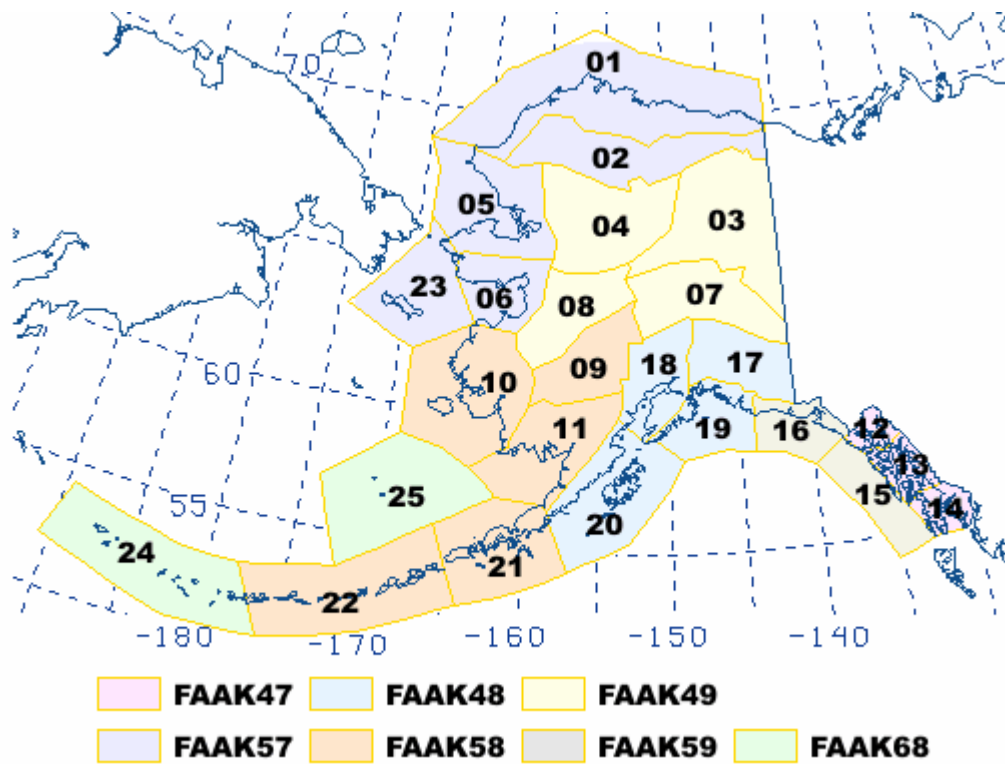
b. Caribbean FA.



c. CONUS FAs.



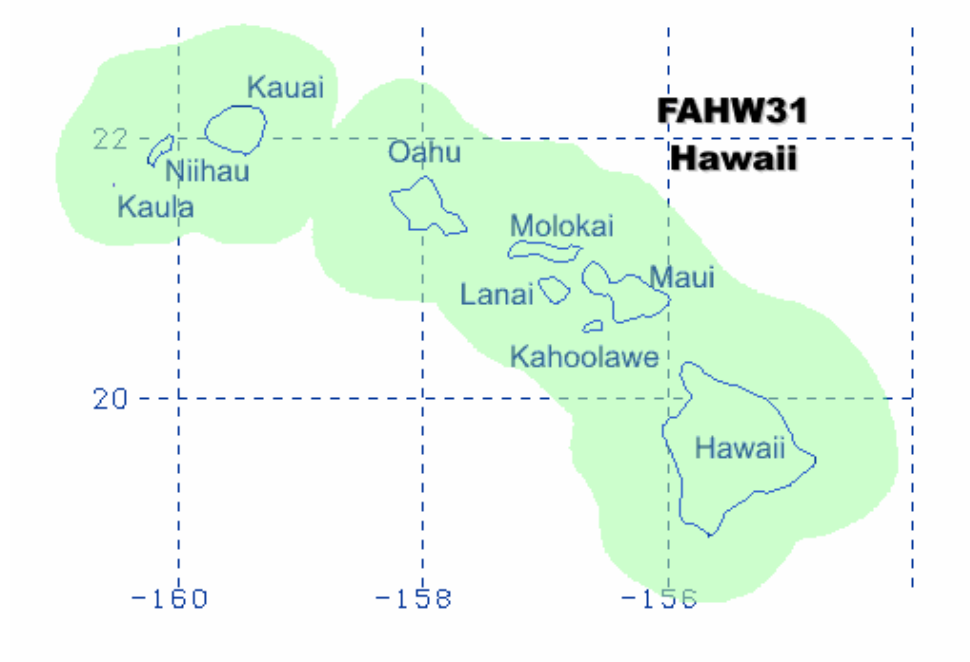
## 5. AAWU Flight Advisory and FA Reference Points



### Zones

- |   |   |
|---|---|
| 1. Arctic Coast Coastal                           | 14. Southern Southeast Alaska                   |
| 2. North Slopes of the Brooks Range               | 15. Coastal Southeast Alaska                    |
| 3. Upper Yukon Valley                             | 16. Eastern Gulf Coast                          |
| 4. Koyukuk and Upper Kobuk Valley                 | 17. Copper River basin                          |
| 5. Northern Seward Peninsula-Lower Kobuk Valley   | 18. Cook Inlet-Susitna Valley                   |
| 6. Southern Seward Peninsula-Eastern Norton Sound | 19. Central Gulf Coast                          |
| 7. Tanana Valley                                  | 20. Kodiak Island                               |
| 8. Lower Yukon Valley                             | 21. Alaska Peninsula-Port Heiden to Unimak Pass |
| 9. Kuskowim Valley                                | 22. Unimak Pass to Adak                         |
| 10. Yukon-Kuskowim Delta                          | 23. St. Lawrence Island-Bering Sea Coast        |
| 11. Bristol Bay                                   | 24. Adak to Attu                                |
| 12. Lynn Canal and Glacier Bay                    | 25. Pribilof Islands and Southeast Bering Sea   |
| 13. Central Southeast Alaska                      |   |

6. Hawaiian FA areas.



## APPENDIX C – Definition of Terms

**Embedded (EMBD):** Indicates that a thunderstorm and/or CB is embedded with cloud layers and cannot be readily recognized.

**Extreme Turbulence (EXTREME TURB):** Turbulence in which aircraft is violently tossed about and is practically impossible to control. It may cause structural damage.

**Flight Information Region (FIR):** An airspace of defined dimensions within which flight information service and alerting service are provided.

**Flight Levels:** A surface of constant atmospheric pressure which is related to a specific pressure datum, 1013.2 hectopascals (hPa), and is separated from other such surfaces by specific pressure intervals.

**Frequent (FRQ):** Indicates an area of thunderstorms within which there is little or no separation between adjacent thunderstorms (used only with high level (FL450-FL630) SIGMETs)

**Instrument Meteorological Conditions (IMC):** Ceiling GTE 500 feet to LT 1000 feet and/or visibility GTE 1 to LT 3 miles. LIMC is a sub-category of IMC, thus, IMC conditions are ceiling LT 1000 feet and /or visibility LT 3 miles.

**Isolated (ISOL):** LT 3,000 square miles or widely separated in time.

**Line (of thunderstorms) (LINE TS):** For SIGMET is defined as being at least 60 miles long with thunderstorms affecting at least 40 percent of its length.

**Low Instrument Meteorological Conditions (LIMC):** Ceiling LT 500 feet and/or visibility LT 1 SM. LIMC is a sub-category of Instrument Meteorological Conditions

**Marginal Visual Meteorological Conditions (MVMC):** Ceiling GTE 1000 feet to LTE 3000 feet and/or visibility GTE 3 to LTE 5 miles.

**Moderate Icing (MOD ICE):** The rate of accumulation is such that even short encounters become potentially hazardous and use of deicing/anti-icing equipment or diversion is necessary.

**Moderate Turbulence (MOD TURB):** Turbulence that causes changes in attitude (pitch, roll, yaw) and/or altitude, but the aircraft remains in positive control at all times. It usually causes variations in indicated airspeed. A Turbulence Index ranging from 6 to 14, i.e., the peak value of the Eddy Dissipation Rate is between 0.1 and 0.3, reported from an aircraft during the en-route phase of flight based on Eddy Dissipation Rate.

**Mountain Obscuration (MT OBSC):** Conditions over significant portions of mountainous geographical areas are such that pilots in flight should not expect to maintain visual



meteorological conditions or visual contact with mountains or mountain ridges near their route of flight.

**Obscured (thunderstorms):** Indicates that a thunderstorm and/or CB is obscured in haze or smoke and cannot be readily recognized.

**Occasional (OCNL):** GT 50 percent probability of occurrence but for LT ½ of the period.

**Scattered (SCT):** GTE 25% to LTE 50% of area affected.

**Severe Icing (SEV ICE):** The rate of accumulation is such that normal deicing/anti-icing equipment fails to reduce or control the hazard. Immediate diversion is necessary.

**Severe Turbulence (SEV TURB):** Turbulence that causes large, abrupt changes in altitude and/or attitude. It usually causes large variations in indicated airspeed. Aircraft may be momentarily out of control. A Turbulence Index ranging from 15 to 27, i.e., the peak value of the Eddy Dissipation Rate is exceeding 0.5, reported from an aircraft during the en-route phase of flight based on Eddy Dissipation Rate.

**Visual Meteorological Conditions (VMC):** Ceiling GT 3000 feet and visibility GT 5 miles.

**Volcanic Eruption:** For this directive, a volcano eruption has occurred when an eruption report is received from a volcano observatory. A volcanic eruption is also considered to have occurred regardless of volcano observatory notification if reported by PIREP, or ground observer, or if remote sensing data indicates that an eruption has occurred based on satellite imagery or WSR-88D radar data or any other reliable sources are identified.

**Volcanic Ash:** For the purpose of this chapter volcanic ash is any ash that can be seen by any one or more of the following: satellite imagery (visible, IR, multi channel or TOMS), PIREPs, ground observations, radar and VAFTAD (In the event volcanic ash is entrained in clouds the volcanic ash will be treated as visible using the VAFTAD as guidance).

**Widely scattered (WIDELY SCT):** LT 25% of area affected.

**Widespread (WDSPR):** GT 50% of area affected.